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Original Articles

CYLINDROMA OF THE ORBIT AND LIDS, WITH REPORT OF CASES.*

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The neoplasm to which the term cylindroma has been applied is characterized by the formation of hyaline cylinders, tubules, and lobulated masses, as a result of a degenerative process, the hyaline tissue composing a relatively large portion of the tumor. The term cylindroma was first employed by Billroth.[1] Henle termed this form of neoplasm syphonoma; Meckel, tubular enchondroma; Friederich, tubular sarcoma; Foester and Köster, mucous cancroid; O. Becker, adenoid der Thrauendruse; other synonyms are mixed tumors, angioma, myxo-adenoma carcinomatosum (Knapp), endosarcoma myxomatodes, carcinomatous cylindroma, endothelioma.

Ziegler,[2] writing of this growth, states that "either the cells form hyaline products or they themselves become converted into such or the fully developed connective tissue and the blood vessels undergo degeneration."

Hektoen and Riesman write as follows: "The stroma of some endotheliomas is subject to metamorphoses of various kinds. In a variety, usually originating from the endothelium of the blood vessels, a hyalin transformation of the vessel walls and of the stroma produces the growth called sarcomatous cylindroma.

According to Arndt,[3] not only do the cells of the adventitia, but also the cells of the interna take part in the hyaline degeneration of the blood vessels in these growths.

Virchow writes, "If a tumor springs from the cells of the blood vessels or lymph channels it is termed endothelioma."

The growths to which the term cylindroma has been applied occur most frequently in connection with the salivary gland.[4] They also form a large proportion of the tumors that are connected with the lachrymal gland. The hyaline changes may occur in rodent ulcer of the eyelid, and, according to Ziegler,[2] in simple sarcoma, endothelioma, and hemangiosarcoma.

The cases that have occurred in my practice are as follows:

CASE 1.—Mary B., aged 32, married, mother of two healthy children, came to the New York Eye and Ear Infirmary Feb. 11, 1905. Ten or eleven months previously she noticed that there was something wrong with the left eye, but paid no particular attention to it until two and a half months ago when it began to be more prominent than the right eye. The protrusion of the left eye has gradually increased to the present time. There has never been any pain of moment, but there were occasional pricking sensations.

Status Præsens.—Patient well nourished; apparently in good health aside from the condition of the left eye. Left eye displaced downward, outward and forward (Fig. 1); so much so that forcible attempts to close the eye result in covering only about three-quarters of the cornea. Movements of globe limited in all directions, particularly above. Ocular and palpebral conjunctiva injected; lids slightly swollen. Iris reacts almost normally to the usual stimuli. Fundus slightly pale. Optic disc paler than its fellow. Arteries small. Veins dark, but not enlarged. Upper temporal vein tortuous. Vision 14/200. Field of vision normal in extent. On palpation a firm mass was felt which extended from the outer to within a few millimeters of the inner upper angle of the orbit, close to the margin of the orbit and apparently extending backward into the orbit. The anterior margin of the mass was about 1 cm. thick. There was no involvement of the frontal sinus or nasal cavity. The right eye was normal.

Operation.—Ether anesthesia. Incision along the supraorbital margin through the tissues to the periosteum. The orbital septum was exposed and divided close to the margin of the orbit. When this was done the margin of the tumor, dark purple in color, came into view. By blunt dissection the tumor, which possessed an irregular surface, was separated from the orbital tissue and from the orbital plate of the frontal bone. It was found that the levator palpebræ superioris muscle was involved in the tumor mass and that part of it had to be removed with the tumor. The lachrymal gland was also involved and was removed. The supraorbital branch of the fifth nerve was loosely connected with the thin capsule which enclosed the tumor and a portion of it was removed. In freeing the tumor, a projecting portion on its lower surface was broken through, but was recognized and dissected out so that the entire mass was removed. The hemorrhage was inconsiderable. The under surface of the orbital plate of the frontal bone was eroded, but there was apparently no communication with the cranial cavity or with the frontal sinus. The tumor extended two-thirds of the distance from the margin to the apex of the orbit. The cavity which lodged the tumor was thoroughly cleansed, shreds of tissue were removed, the orbital plate curetted and the wound closed. The margins of the orbital septum were united with catgut sutures, the integument with silk, and a dry dressing was applied. Kroelin's operation was not resorted to, as it was not found necessary.

Size of Tumor.—The antero-posterior diameter of the tumor was 1½ inches (33 mm.); transverse diameter, 1 5/16 inches (34 mm.); vertical diameter, 1 2/16 inches (30 mm.). Its superior surface was nearly quadrilateral; lateral and under surfaces very irregular.

Subsequent History.—Some traumatic swelling of the tissue of the lid and surrounding parts followed and lasted for a few days, but eventually entirely subsided. The eyeball gradually assumed its normal position. At the end of two weeks motility had returned and was only slightly limited above and below. Vision became 20/200 +. There was no diplopia. The fundus presented much the same appearance that obtained before the operation, except that the blood-current in the veins became normal in color. The tortuosity disappeared.

About the middle of April the patient again appeared at the clinic, presenting a recurrence of the growth. As my

*Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Unters über d. Entw. d. Blutgefasse, etc., 1856.
2. General Pathology, William Wood, 1903, p. 431.
3. Virchow's Archiv, vol. 49, p. 367.
4. See Wood's comprehensive article, Annals of Surgery, 1904, p. 57.

term of service does not include the months from April to October, the patient passed into the hands of Dr. W. B. Marple, who performed exenteration of the orbit. The recurrence had apparently taken place from that portion of the orbital plate of the frontal bone which had become eroded by contact with the primary growth. The mass filled the upper part of the orbit, extending backward to the apex, but had not involved the globe. The growth was rather soft and friable. Healing progressed favorably. It is as yet too early to determine whether a second recurrence will take place.

Histologic Examination.—Primary growth: The mass is completely enveloped in a capsule which is fairly thick anteriorly and thin in other parts. The portion that was next to the orbital plate of the frontal bone was roughened, it included the periosteum. Remnants of the lachrymal gland somewhat indefinitely separated from the tumor proper by an imperfect capsule were found in the upper outer part of the mass. The tumor proper consists of a dense stroma which composes the greater part of the growth and collections of cells arranged in masses and in the form of tubules, which might be called the parenchyma. The stroma, which is densest at the periphery, is composed of rather large bundles of connective tissue fibers, presenting a few fixed cells on and in the bundles. Clefts between the bundles are as a rule small and contain a few young connective-tissue and apparent endothelial cells; that is, cells that may have been derived from the endothelium lymph-spaces. Many of the bundles of connective tissue have undergone hyaline degeneration. While the greater number took eosin well, many were stained faintly with eosin and also faintly with hematoxylin, probably indicating the presence of mucin.

Blood Vessels.—The blood vessels are not large, nor are they very numerous. All appear in the stroma of the tumor, none in the parenchyma. The vessels in the capsule have well-defined walls; those in the body of the tumor mass are without walls or are limited by a single layer of endothelial cells. The walls of the smaller vessels in many places are enormously thickened and have undergone hyaline degeneration, the lumen of the vessel being greatly reduced, the endothelial cells crowded together, and a thin column of blood occupying the axis of the canal. In a number of places there is a marked increase in the endothelial cells of the vessels, the transition of the endothelium of the vessels into cellular tubules being evident.

Lymph Channels.—The lymph spaces appear to be almost filled with cells having elongated, flattened nuclei. The walls are composed of broad hyaline bands which anastomose or coalesce These bands are not perfectly homogeneous, but many of them are nearly so. Nearly all show striæ, indicating a fibrillar origin.

Cells of the Stroma.—Small round cells, mononuclear and multinuclear, new-formed connective-tissue cells in different stages of development, endothelial cells, usually in small groups.

Connective Tissue.—Arranged in large bundles and massed together, particularly at the periphery. Nearer the center and where the cells of the parenchyma are not plentiful, the connective tissue is less dense and forms trabeculæ. In the recurrent growth the parenchyma predominates over the stroma.

Elastic Connective Tissue.—Sections of the primary and of the secondary tumors stained with Weigert's elastic-tissue stain show numerous elastic-tissue fibers intermingled with the non-elastic-tissue fibers, proportionally more plentiful in the connective tissue septa, which go to form irregular alveoli in which the cells of the parenchyma are lodged.

Recognizable Tissue of the Lachrymal Gland.—Occupying the upper outer portion of the tumor is a small, thin plaque of tissue which contains the remnant of the lachrymal gland. This consists of a number of acini, more or less distorted and separated one from the other by a stroma rich in new-formed cells. The acini are irregular in shape, the cells of the acini arranged in a single layer, often with large lumina the protoplasm of the cells seemingly small in amount, the cells cuboid in shape; frequently with small lumina, the cells apparently being more columnar in shape or more closely crowded together. In some parts the acini were much distorted, the lumina being long and narrow instead of circular, as in the normal acinus. Wherever an aggregation of cells suggesting acini was found, lumina were present, apparently limited by a fenestrated membrane as described by Verhoeff.[5] The acini and the cells of the character forming acini appeared to be separated from the main growth by a more or less definite connective tissue wall of some thickness, a condition that has been pointed out by Veasey[6] and others.

Parenchyma.—The cells which form the parenchyma of the tumor proper are large, slightly oval or cuboidal, seldom columnar. They are arranged in irregular masses, often in tubular masses, with a fairly sharply-defined limit. The cells fill the entire space between the walls of the stroma, no lumina being present. The masses of cells contain some leucocytes. Not infrequently a degenerated area marked by faintly-staining fragments of cells, granular substance and irregular hyaline masses is seen. Many of the cells composing the masses just described closely resemble the cells which are found in ordinary endotheliomata. Many might be modified epithelial cells so far as their morphology is concerned. There is apparently no positive evidence regarding the true origin of these cells. The

Fig. 1.—Cylindroma of the orbit.

spiral fibers of Herxheimer,[7] which he regards as peculiar to stratified, tesselated epithelium, could not be demonstrated. A limiting fenestrated membrane indicating glandular lumina was absent.

The recurrent tumor resembles the primary tumor except that the cells of the parenchyma are much more numerous, forming the bulk of the mass, and that the hyaline degeneration was not so conspicuous.

CASE 2.—Mr. S., aged 46 years, came to the New York Eye and Ear Infirmary in May, 1891, suffering from an ulcer of the right lower lid, situated 3 mm. below the margin of the lid and measuring 5 mm. in its vertical and 8 mm. in its horizontal axis. The margins were slightly raised, thickened, and irregular. The ulcer was shallow, the floor being covered by a grayish secretion and crusts. The ulcer had commenced some years ago as a small elevation with a scaly apex. There was very little irritation. After a time the roughened, thick

5. Jour. of Med. Research, vol. xiii, No. 3, p. 324.
6. Medicine, November, 1902, p. 881.
7. Monatschr. f. prakt. Dermatol., xl, p. 89.

cheek epithelium gave place to a small ulcer and a scab. The ulcer slowly increased in size in spite of treatment.

Operation.—A diagnosis of epithelioma was made and the growth was excised. The recovery was rapid. The patient was discharged and was lost sight of.

Microscopic Examination.—The growth consisted of epithelial digitations which dipped into the tissue from the surface, and margin of the ulcer. The periphery of the growth was composed largely of hyaline bands or tubules which had apparently developed because of changes in the endothelium and adventitia of small blood vessels and of lymph channels. The tissues resembled closely the hyaline tissue that was present in the growth in the case first described.

GENERAL NATURE OF THE ORBITAL GROWTHS WITH HYALINE DEGENERATION.

Aside from the characteristics just described, tumors of the orbit of this nature sometimes develop myxomatous tissue, cartilage and true bone. These are products of mesoblastic tissue and stamp the growth certainly, so far as the stroma is concerned, as mesoblastic in origin. If the cells of the parenchyma are of endothelial origin, the term endothelioma to designate this feature followed by the term cylindroma to denote the peculiar hyaline structure, would be appropriate. The lachrymal gland does not always accompany the growth that results in the formation of cylindromatous tissue; however, I have been unable to find any reports of a case from which epithelial tissue could be entirely eliminated. It is possible, as held by some observers, that the parenchyma of these growths is largely of epithelial origin. The morphology of many of the cells does not contraindicate this supposition. Ziegler writes, "I have classified as endothelioma those tumors . . . which are characterized by the formation of cell cords in the lymph channels on the assumption that these cords of cells arise from endothelium of the lymph spaces and lymph vessels. I must admit, however, that I do not consider this assumption as absolutely proved."

Taking into consideraton the fact that these tumors contain hyperplastic tissue which develops largely from mesoblastic tissue, but that epiblastic tissue is always present and may preponderate, it is evident that the tumors are "mixed tumors." However, since the peculiar hyaline change that takes place in mesoblastic formations in these growths is often so striking a feature, I believe with Verhoeff that the term cylindroma should be retained.

MALIGNANCY.

In regard to recurrences after the removal of tumors of this character from the orbit I am convinced that the reports of cases are misleading in this respect, as they are often made too early to determine whether a recurrence will or will not take place.

Of 56 cases cited by Lagrange[8] recurrences were mentioned in 11. Of 26 other cases, the reports of which I have reviewed, recurrence took place in 8.

In a case observed by Ewetsky[9] metastasis took place in the liver, resulting in the death of the patient.

The reports of these cases lead one to conclude that they are not so malignant as ordinary sarcoma and carcinoma, but they require most thorough removal. If osseous structures are involved, they should also be removed. Metastases occur very rarely. Tumors of the kind described have been observed in individuals from the age of 17 to 72 years. A number have developed after traumatism.

Association of lachrymal and parotid neoplasms has been noted by de Wecker and Masselon[10] and others.

8. Tumeurs de l'Oeil, vol. xl.
9. Virchow's Archiv, vol. lxix, p. 36.
10. Soc. d'Ophthalmologie de Paris, Dec. 1, 1901.

DISCUSSION.

DR. C. R. HOLMES, Cincinnati, reported the case of a patient with the history of painless displacement of the left eye, vision normal. At the upper inner canthus one could feel a mass, hard, yet somewhat elastic. On making an inverted T-shaped incision at the upper inner angle of the orbit, Dr. Holmes found that the mass was not a distinct tumor, but that the partially broken down os planum had been pushed into the orbit. Opening it, he found several small nodular masses extending into the ethmoid cells. He removed everything back to the sphenoid and up to the cribriform plate, and did not sew the wound up entirely, but left space for drainage. The wound gradually contracted and finally closed entirely. Two pathologists who examined specimens could not give a positive diagnosis. Dr. Weeks pronounced it an endothelio-cylindroma. To make sure that syphilis played no part in the case and before Dr. Weeks' assurance of the diagnosis was received, the patient had been given a thorough course of anti-syphilitic treatment, which, however, made no impression on the local conditions. Dr. Holmes said that the history of the case warranted him in eliminating this factor. Two weeks ago patient was well, but with slight displacement of globe. Vision and ophthalmoscopic examination were then negative.

DR. E. V. L. BROWN, Chicago, referred to the paper read in the Section on Pathology and Physiology by Dr. Zeit, who laid especial emphasis on the tendency to hyaline and mucoid degeneration and the frequent recurrence, but infrequent metastasis. He looked on these tumors as sarcomata of slow growth, as exemplified in Dr. Weeks' case.

DR. JOHN E. WEEKS said that he thought that these tumors constitute the majority of the tumors of the orbit that originate in the lachrymal gland. Such tumors are not numerous, but they form a relatively large percentage of the tumors of the orbit; consequently their study is of great importance.

DIFFERENTIAL DIAGNOSIS OF INTRAORBITAL TUMORS.*

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That the subject of differential diagnosis of intraorbital tumors is worthy of consideration is emphasized by the egregious mistake made recently by some of the members of the Association in the case here reported. My object is not to criticise those who saw, examined and made their diagnoses, but rather to emphasize the liability even of eminent oculists to err in their diagnoses of growths of the orbit and consequently to advise treatment which if carried out would be damaging to the patient as well as to the oculist.

Before proceeding to administer treatment for intraorbital tumors, we should arrive, if possible, at a correct diagnosis, as there are several kinds of growths which invade the orbit, and not all are amenable to the same treatment. Among the several kinds of growths of the orbit there exist both benign and malignant. There are bony, fleshy, bloody, nervous, fatty and serous tumors. Among the benign are the lipomatous, fibrous, cystic and osseous. Among the malignant, are carcinoma, sarcoma, epithelioma, glioma, and polypi. The benign may have their origin within or without the orbital walls, but most of them grow from the periosteum of the orbit, or from within the cone of the recti muscles. On the other hand, nearly all, if not all, malignant tumors of the orbit originate from within the eyeball, or from some one of the neighboring sinuses opening into the orbit. Some come from the brain. Carcinoma, sarcoma and glioma, as a rule, start from within the eyeball. The fluid or semifluid tumors arise as a rule from the frontal sinuses or from the ethmoid

*Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

Fig. 1.—Patient two days before extirpation of tumor.

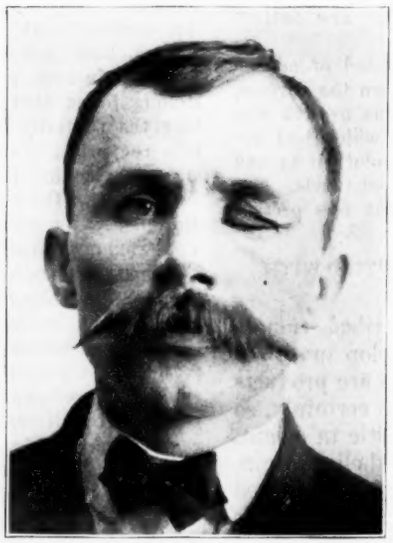


Fig. 6.—Patient ten days after extirpation of tumor.

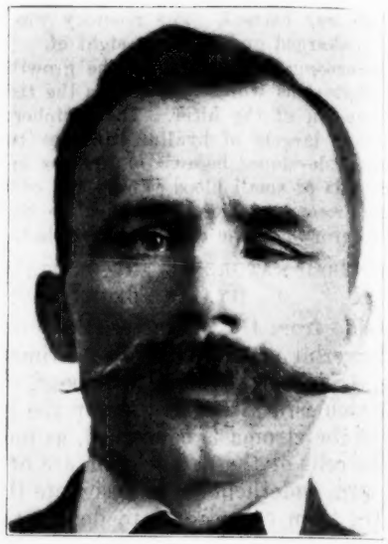


Fig. 8.—Patient two weeks after extirpation of tumor.

Fig. 2.—Another view of patient, two days before extirpation of tumor.

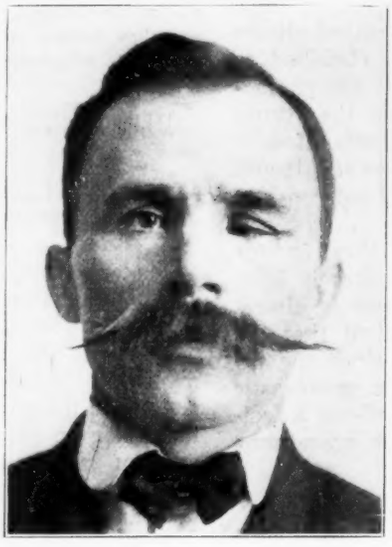


Fig. 7.—Patient four days after extirpation of tumor.

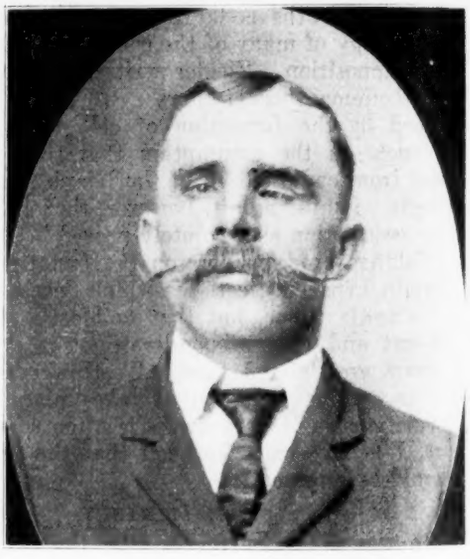


Fig. 9.—Patient six months after removal of the tumor.

Fig. 3.—Anterior view of tumor.

Fig. 4.—Posterior view of tumor.

Fig. 5.—View of tumor incised.

cells and contain pus or nuclei. The solid or gelatinous arise from the maxillary, sphenoid or ethmoid. From these latter almost invariably there is scotomata and occasionally there is complete blindness from optic neuritis or atrophy of the optic nerve. Epithelioma comes from the lachrymal duct or canal; polypoids, from the antrum of Highmore; cystic tumors from the frontal sinuses. Osseous tumors more frequently arise from the periosteum of the supraorbital plate, occasionally they spring from the inferior wall. Vascular tumors, such as angiomas, nevi and some of the aneurisms as a rule, come from the intracranial cavity. Most orbital aneurisms arise from the orbital branch of the ophthalmic artery where the latter leaves the internal carotid.

DIFFERENTIAL DIAGNOSIS OF ORBITAL TUMORS.

Of course this can not always be done, as has been demonstrated in the following case, but, as a rule, with a definite knowledge of the symptoms of these various growths and a careful examination, one can be pretty certain of the real nature of the growth. Malignant tumors run a rapid course and sooner or later produce pain, ranging from a slight ache to a most agonizing distress, and if they are allowed to run their course they destroy vision and attain enormous dimensions, pushing the eye out of the socket and extending far beyond the limits of the orbital cavity.

On the other hand, benign tumors grow slowly, they may exist many years before attaining any considerable size, they rarely give pain, nor do they as a rule destroy the vision. By pressure on the optic nerve, however, they may produce neuritis or neuroretinitis and finally atrophy of the optic nerve. There is always one symptom common to all forms, excepting a luxated lachrymal gland, namely, proptosis. This exophthalmia takes different directions, and this locates the seat of the tumor. If the tumor is at the apex of the orbit or within the cone of the recti muscles, the extruded eye will take the direction of the orbital axis; if the eye is pushed outward and downward, it indicates the seat of the tumor as being at the upward and inward portion; if the eye is pushed inward and downward it indicates the location of the tumor as being upward and outward. With the little finger, one can get behind the eyeball, and if on palpation the tumor is found to be hard and immobile, we can conclude that it is of an osseous nature, especially if the tumor be of slow development. If the tumor is soft and fluctuation can be detected, it may be of a serous, phlegmonic or sanguinous nature. If it is soft or yielding without fluctuation or pulsation it may be fatty, as a lipoma; or if soft and less yielding without fluctuation it may be fibroid or glandular, as an adenoma. If it is vascular, as an angioma, nevus or aneurism, there will exist pulsation and bruit, especially if the patient takes the stooping position with the head hanging low. Osseous tumors do not change position or size in any change of position of the patient; to a certain extent, however, this is true of all tumors of the orbit with the exception of the sanguinous. In fatty and fibrous growths pressure on the tumor may cause more proptosis of the eyeball; but on the other hand pressure on the eyeball will probably cause more prominence of the tumor. In pulsating tumors, the upper lid is swollen and tense, especially are the veins hyperemic, with an elevation of temperature, both lids frequently being everted. The protruding lids and exophthalmia being replaced will immediately return on removal of pressure. There is a continuous soughing or murmuring; sometimes the sound is of a whistling nature. Pressure on the carotid will cause the pulsation and noises to cease. The ophthalmoscope often reveals a papillitis or atrophy of the optic nerve. Venous pulsation is nearly always present and not infrequently arterial at the margin of the optic disc. Patients with angioma complain of a knocking, roaring or buzzing in the head and ears. This disease is more frequently seen in women than in men. It is difficult to determine the different varieties of pulsating tumors. The vascular are more resistant than aneurisms and their position, as a rule, is out of the line of the axis of the orbit. The pulsating tumor is usually found at the inner and upper part of the orbit and the bruit is of a continuous murmur and is complicated with a vesicular murmur of each systolic action of the heart. There is frequently a paresis of some of the

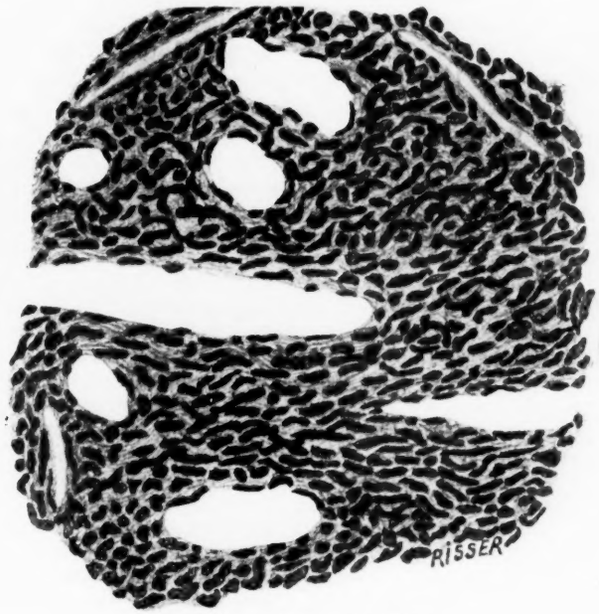


Fig. 10.—One-fifth objective.

Fig. 11.—Two-thirds objective.

nerves of the eye muscles, ptosis occasionally existing. In pulsating malignant tumors ligation of the common carotid does no good. In angioma, in all cavernous tumors and in aneurisms, on making pressure on the tumor or eyeball there will be a recession of both eyeball and tumor; or, if the patient takes the horizontal position the eye will settle back into the orbit. The principal diagnostic symptom of an angioma or aneurism, however, is the bruit heard by means of the stethoscope together with the pulsation felt by palpation.

REPORT OF A CASE.

The following is a letter received previous to the arrival of the patient:

DR. FLAVEL B. TIFFANY. Dec. 2, 1904.

Dear Doctor:—I have patient who has been to all the eye men in the western country. His case has been variously diagnosed. Some call it angioma, others aneurism, and one man has diagnosed enlargement of the lachrymal gland. His condition is rapidly getting worse and something must be done soon. The growth is situated behind the eyeball, pushing the latter out to an enormous degree. It is a pulsatile tumor, not painful. The only pain is caused by the accompanying conjunctivitis, which is caused by failure of approximation of the lids. The patient is poor, but very worthy, and his case is one which I am sure would prove very interesting to your class. I would like to have him consult you if you could do it charitably; then if there is any operative work to be done he might be able to pay you something. If you can do anything, would some day next week suit you? Hoping to hear from you soon and trusting that something can be done for the poor fellow, I am, truly, RALPH L. FUNK.

The patient consulted me first December 10, 1904. I give the history in his own language:

History.—I am 38 years old, married, and by birth a German. I am a farmer and live at Baker, Kansas. Five years ago my wife first noticed something wrong with my eye. I did not notice it until we had a picture taken of the family group, when I saw that my left eye bulged. I went to the family doctor several times, but he did not seem to know very much about it. I then went to Dr. R., who took out a piece about as big as the end of my thumb. My brother said that the substance was stringy and that he removed it with a hook. Two days after the operation the doctor told me that he had not gone deep enough and would have to operate again, but the chances were that I would lose the sight of my eye. I had lost confidence in him, so I went to St. Joseph to see Dr. W. He described the case to me and told me that it was a bad case of bloody tumor. He used the electric needle five days to clot the tumor, as he said, and then he would pick it out. He said I should have to take chloroform. My brother witnessed the operation, and he said I had a severe hemorrhage and Dr. W. told me that I lost three and a half pounds of blood; he said that he stopped the flow with hot irons. Six weeks after this operation I went back and he wanted me to let him take the eye out and get at the root, but I was afraid. I then went to Dr. B. of Nebraska, and I was in the chair ready for the operation and the assistant ready to give the chloroform, when the doctor, after making a more careful examination, said that if I would rather, he would present the case before the Academy of Ophthalmologists and Otologists at Denver, Colo. Said that the celebrated eye doctors of America were having their meeting at this time at Denver. I went before them and they decided it was angioma. I then had an opportunity to go to Omaha and while there I consulted another eminent oculist, but he could not tell what the trouble was and said if I was in no hurry he would write to Dr. Knapp of New York, who had a case like mine twenty years ago when he was a student of Dr. Knapp's, and the operation was successful. He was to let me know when to come up for the operation, but I have never heard from him. I then went to Dr. Funk, whom I have known for some time, and he advised me to consult you. I have never had any serious sickness nor injury on the head that I can recall. I had la grippe about one year previous to noticing anything wrong with the eye.

A day or two after giving the history the patient received the following letter:

Dec. 14, 1904.

Dear Sir:—Since you left I have looked up the matter of tumors similar to yours and believe that it would be better to try tying the internal carotid artery to see if that will not stop the progress of the disease without operating on the orbit directly. If none of the surgeons there care to do this for you, you can have it done here, or if this does not cure you it will then be time to consider a direct operation on the orbit.

Yours sincerely, ———.

Before operating, I presented the case to our local society, the "Academy of Medicine," and after getting the history from the patient and examining him it was the consensus of opinion that the tumor was an angioma; several declaring that they detected pulsation and bruit; one oculist advised enucleation of the eyeball and extirpation of the tumor. I did not agree with them, as I could not detect the least pulsation, nor could I hear any bruit, nor would the eye or tumor change position with the changing of position of the patient. I said, however, that an operation would tell and we would be ready to stop all hemorrhage. I asked Prof. Jabez N. Jackson to assist and to be ready, if necessary, to ligate the internal carotid artery.

Examination.—The eye was displaced downward and inward, locating the position of the tumor, viz., upward and outward (Figs. 1 and 2). There was little if any change of position or size of the tumor when the patient was in a stooping posture with the head hanging low, or when he was standing or lying in the horizontal; nor could we change the size of the tumor by pressure, all of which went to show at least that it was not an aneurism and to a certain degree not an angioma. The lids showed some venous hyperemia as Figs. 1 and 2 indicate. This I attributed to meddlesome surgery, for, according to the patient's statement, he had had several operations, which with the normally high vascularity of this region would be likely to produce hyperemia. From the history as given by the patient particularly, if we may rely on what he said in regard to the opinions of the physicians whom he had employed, more especially the opinion of the members of the society of oculists who saw him at Denver, as well as the letters received, without due consideration and careful examination I might have jumped at the conclusion that it was a case of angioma; but with careful examination with the stethoscope no bruit was heard and by palpation not the least pulsation was detected, not even with the head hanging low. I was inclined, therefore, to discredit any existing angioma or aneurism, especially as this growth was only of five years' standing, coming on after middle life and without history of an injury. The ophthalmoscope showed no arterial nor venous pulsation at the disc, although the latter was somewhat blanched, this being due, probably, to the pressure of the tumor. There was some hypermetropia, caused also by pressure shortening the antero-posterior axis, but there was no hemorrhage nor scotoma. The tumor was evidently not malignant, as it was of slow growth and had given no pain and had not destroyed the vision. It was evidently benign in nature and did not come from any of the neighboring sinuses; nor was it osseous, for it was movable. By exclusion, therefore, it was logically concluded that it must be one of three kinds: fibroma, lipoma or adenoma. I have had two cases of luxated lachrymal gland in my experience, but the gland being so high in the orbit did not displace the eyeball much, so I was inclined to think that this was a fibroma or a lipoma.

Technic of the Operation.—December 22 I performed the following operation: I first passed a black suture through the external rectus for sake of identification. I tenotomized the muscle in order better to liberate the tumor from the muscles. I then made an extensive canthotomy, cutting through the orbicularis. At the margin of the orbit I went in back of the conjunctiva, taking care not to disturb more than necessary

ary of the extrinsic ocular muscles, nor the levator palpebræ superioris; then, by traction, I tore the tumor from its mooring, which was somewhat adherent to the recti muscles. There was some hemorrhage, but there was no trouble in controlling it with the hemostats. I finally detached the tumor in its entirety.

In incising it, the pathologist pronounced it an adenoma, thinking it to be the lachrymal gland luxated from its bed in a hyperplastic condition, having increased in size and weight. The dimensions of the tumor taken by the calipers were 28 mm. horizontally, 38 mm. vertically, and 22 mm. transversely. Its weight was 19.5 grams. Figures 1 and 2 show the appearance two days before the operation, and Figure 6, ten days after the operation; Figures 3 and 4 show the bulk and shape of the tumor, the illustration being natural size. Figure 5 shows the tumor cut open. A photograph taken four days after the operation (Fig. 7) shows the swelling of the lids not all gone, with complete ptosis and ankylosis of the eyeball, but it has receded into the orbit, and the vision is even better than before the operation. There is a decided convergence of the eye with ankylosis, indicating a paralysis of all the extrinsic ocular muscles except the internal rectus, but these conditions gradually improved as the swelling subsided. A photograph taken two weeks after the operation (Fig. 8) shows the swelling of the lids and the chemosis of the conjunctiva nearly gone and the eyeball receded into the orbit. There is complete paralysis of the levator palpebræ superioris and of all the extrinsic ocular muscles, the patient not being able to lift the lid nor to move the eyeball in any direction. The tearing of the tumor loose from its attachment evidently disturbed the nerves innervating these muscles, besides there has been some intraorbital cellulitis, which accounts for the ankylosis. The patient says that the whole left temporal and supraorbital region half way back is numb and void of all feeling, but the paralysis and anesthesia were transitory and in time passed away. He handed me several photographs taken at different periods of time for the past sixteen or eighteen years. These pictures establish the fact beyond doubt that the tumor did not start until about five years ago, and that it was of slow growth.

The special thing this case teaches us is not to depend too much on the history of the case from a layman's point of view, but to examine closely and to arrive if possible at a correct diagnosis before outlining the treatment.

I was inclined to rest content and to agree with my colleague, and to call the tumor a dislodged lachrymal gland until I submitted it to our pathologists, one of whom called it a fibrosarcoma, and the other an angiomyoma. After this controversy, the tumor was sent to Chicago. Dr. Emil Ries and Dr. Zeit pronounced it an endothelioma or a perithelioma.

This patient last called on me June 1, 1905, and there was no evidence of the tumor returning either locally or metastatically. The muscles had regained in part their function. His vision is now sufficient to read newspaper print. Figure 9 shows the appearance of the eye at this time.

Microscopic examination showed principally that the blood vessels had no definite walls. (Figs. 10 and 11.)

Patent Medicines in Norway.—It is reported that a new law in Norway forbids the newspapers to publish advertisements or in any way to further the sale of any and all foreign patent medicines.

ONE OF THE CAUSES OF IMPERFECTION IN THE RADIOGRAPHIC IMAGE.*

HENRY POWER, M.D.
SPOKANE, WASH.

Two recent articles on the *x*-ray in THE JOURNAL of the American Medical Association have interested me much. One in particular, in which the author, Dr. Stover of Denver, touches on the subject of the formation of *x*-rays at parts of the Crookes tube remote from the target. The belief in the formation of such rays is widespread and, no doubt, has some origin in fact. I wish in this paper to show that in some cases at least these rays are not thus produced, and can not, therefore, be held responsible for the bad effects noticed in radiography which are usually laid at their door. That there is, nevertheless, some obscure cause at work which tends to reduce the sharpness of the radiograph or of the fluoroscopic image is undoubted and it may be stated further that the *x*-rays do reach the photographic plate from directions other than that in which the target of the tube lies. In order to demonstrate the true origin of these interfering rays, I have performed three experiments, the results of two of which appear in the illustrations. The reproduction shown in Figure 1 is taken from a negative in which different parts of the plate were treated in three different ways. The part marked A was used to receive an exposure of the metacarpal bones in the ordinary manner. The part faintly showing the fingers of the hand, marked B, was exposed at the same time, but a sheet of lead 1/16 of an inch thick was suspended between the target and the hand exposed and at a distance of twelve inches from the hand and plate. Over the two narrow strips marked C, strips of lead were placed having the same thickness as the first, but in apposition to the plate. It will be noted in this illustration that the shadow C is much more dense than the shadow B, though the lead in each case was 1/16 inch thick. To account for this difference, we must assume that the rays which produced the image seen at B must have passed around the edge of the lead and not through it.

If they passed around the edge, we may assume three possible methods by which they accomplished their results:

1. They may have come from a different source of light in the tube, accessory rays. 2. They may have bent from their normal straight line, refracted rays. 3. They may have been produced by the action of the well-known rays from the target, striking the air and causing it to give off new rays in new directions, induced rays.

I am unable at present to devise an experiment which will distinguish between refracted and induced rays, but in regard to the first form, the accessory rays, that they, on this occasion, do not exist, is proved by the following experiment made with the same tube, coil, etc.

A completely closed lead box, which may be considered as a photograph camera for *x*-ray work, was placed fifteen inches below the target of the tube. The camera itself being five inches deep, with the photograph plate at the bottom, it will readily be seen that the plate was twenty inches from the target. As is well known, it would be impossible to use a lens by means of which to form an image of the source of *x*-rays in the tube, so

* These experiments were performed in February and March, 1905; the paper was read at the April meeting of the Spokane County Medical Society.

that for this purpose resort was had to what is known as pin-hole photography. In other words, the front of the camera was pierced with a minute round hole, which would allow the *x*-rays to pass through and which at the same time was so small that they would be forced to form an image on the plate at the botttom of the camera. The plate was now prepared in the ordinary way for *x*-ray work by enclosing it within two light-tight paper envelopes, and then placed at the bottom of the camera. The *x*-ray was now turned on and a long exposure

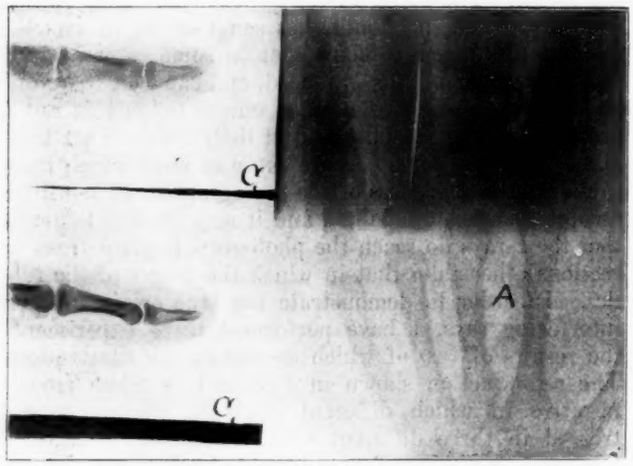


Fig. 1.—Printed lightly to show the image of the fingers produced by the lawless rays which have been induced by the lawful rays which affected the plate at A.

Fig. 2.—Print fully exposed from part A of negative from which Fig. 1 was taken.

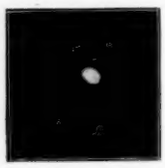


Fig. 3.—An image of the source of *x*-rays in an active tube taken by pinhole photography with a lead camera and a plate protected from ordinary light.

given. In examining the resulting negative, it is noted that it is perfectly blank with the exception of one spot (Fig. 3). When one examines this spot one sees that it represents a picture or image of the target of the tube, and, on measuring it exactly, I find that its diameters are exactly one-third of the diameters of the target. In the center of this spot there is a far more dense spot, having a slightly oval shape, and the diameter of about ⅛ of an inch. This dense spot represents an image of the active central part of the target, where the cathode rays come to a focus; this measurement multiplied by three gives the diameter of the focus as about ⅜ of an inch. Over all the rest of the plate no effect has been produced by the action of the rays, though the various parts of the plate must have been exposed respectively to the effect of any *x*-rays which emanated from the various parts of the tube other than the target. I feel that this negative, therefore, proves that in this particular instance, at least, no *x*-rays worthy of notice were produced in any art of the tube, with the exception of the target. In the illustration the faint image of the target has been lost and only the image of the central or focus point is shown.

I am therefore forced to the conclusion that the rays which caused the trouble in this work, as illustrated at B in Figure 1, are produced in one of the two other ways, and probably by the regular rays inducing new rays by their effect on the air through which they pass.

OPERATION FOR CANCER OF THE MOUTH.*

W. W. GRANT, M.D.

DENVER.

The advantages claimed for the new operation which I have recommended[1] for carcinoma of the lip are: a better, more useful mouth, and, with less tension, a fuller and more natural lip and expression. There is also the distinct esthetic advantage that the lines of incision are less conspicuous, and in men, the usual victims of carcinoma, are soon covered entirely by beard. Plastic surgery means the free use of the knife in liberal incisions, and infinite patience and attention to details. In some respects this is more important in the surgery of the face than of any other part of the body. I know of no department of surgery which taxes more severely the skill, nice sense of proportion, harmony and delicate technic of the surgeon. In the unusually bad cases I report, the operation is tedious, bloody, of rather extensive proportions, and formidable in appearance during its progress; but results justify every step and effort in its consummation. The disease usually occurs in the lower lip of males. The operation is equally applicable to the upper lip, and to partial or complete excision of the lip.

The ordinary V operation, in common use so long that it seems heterodox to question its standing, is most inappropriate, except in small growths, with large mouths. Though the lips are very elastic, they can not stand the excision of the vermilion border with its broad base and apex on the chin. The sucker mouth results, and the tension and contraction are too great to make a useful mouth or a desirable appearance.

METHOD.

The method of procedure consists of two perpendicular incisions on each side of the growth, connected by a straight transverse incision at the base, which is usually about the crease between chin and lip. This leaves a quadrangular space to be filled by flaps. An incision is now made from each inferior angle of the wound, obliquely downward and backward beneath the maxilla, on a line about equidistant between its angle and apex of chin or symphysis. Its further extension is measured

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Medical Record, March, 1899.

by the extent of lip removed and the glandular involvement. All the submaxillary glands are removed through these incisions except the submental, which may necessitate a separate incision in the middle line. When the lip is extensively involved, the cheek is completely separated from the inferior maxilla to the middle of the masseter muscle. After the glands are cleaned out the triangular flaps are brought together and united first in the middle line. If the tension is great or considerable, from the amount of tissue excised, I am in the habit of inserting one mattress suture about three-quarters of an inch from the central line and tying it over pads of gauze, covered with oiled muslin to prevent soiling. This effectively removes undue tension from the sutures in the center of the flaps. The stitches uniting cheek posteriorly are now inserted, or if previously inserted are tied, care being taken to include entire thickness of cheek or upper border. I use for this purpose interrupted silkworm gut or running stitch of chromicized catgut. A small rubber tube should be inserted in the posterior angle of wound on each side to drain the mouth and for irrigation purposes.

The stationary chin tissue is of the greatest importance as a point of fixation for the flaps. In uniting the flaps to the chin, in the centers it is well to omit a stitch for drainage of the space between incisors and flaps. When half or more of the entire lip is removed, I am in the habit of perfecting and completing the operation by making an incision from each angle of the mouth backward and slightly downward half to one inch in length, down to the buccal mucous membrane, and then separating the latter from overlying tissues above, below and posteriorly to the extent of half an inch. The lip above and below is now beveled from the inner border in order to conform to natural conditions and also to make it easier to cover. The mucous membrane is now divided in the middle line and the flaps united to the skin by one continuous suture of chromicized catgut.

The orbicularis being cut in this part of the operation, the levator angulæ and superioris muscles will tilt or crimp the upper lip for two or three months at upper angles of the mouth. This is not a serious matter, as it will accommodate itself to the parts by the action of the depressors, and will hardly be noticed, if at all. Still, I am in the habit of cutting away more tissue at this point in order to limit this temporary defect. The operation is now complete in every detail, without leaving a single place to heal by granulation, or to be covered by future plastic work. The operation is completed with the application of gauze and bandage to face and head.

The ordinary method of anesthesia is objectionable in these operations, because in the way of the operator, causing much delay. To obviate this I have devised, and had made, a double nozzle on a single stem, which is attached to a Junkers inhaler in place of the ordinary shield. By this device the anesthetic, usually chloroform, is administered through the nose entirely, while the apparatus and anesthetizer are both out of the surgeon's way and the operation proceeds without interruption. The mouth is also filled, moderately, with gauze, and the swallowing of blood is prevented.

POSTOPERATIVE TREATMENT.

This is of great importance. There is no such thing as perfect aseptic surgery of the mouth. This applies with great force to dirty, extensive carcinomas with usually bad teeth and constantly infected secretions. Consequently, daily change of dressings is necessary, with irrigation of mouth, directly and through tubes, with mild antiseptic solutions, such as boric acid and peroxid of hydrogen. This is continued a week or more as the conditions may require.

The patient is fed in the meantime with milk and soups through a tube attached to a fountain bottle or the nozzle of an invalid mug. Salines are given in the same way when needed.

COMPARISON.

Excepting the V operation, those in most general use are the Langenbeck, Bruns and Diffenbach, with slight modifications. By Langenbeck's method the growth is removed by an elliptic incision, and the flap for the lip is taken chiefly from the chin on one side, leaving a spur from the opposite to stitch to.

Esmarch, Kowalzic and Volkmann perform the same operation, except in making a double flap, which leaves them without a stable attachment. Both are very objectionable in not having a mucous covering for the flaps, or vermilion border. The result is a contracted mouth and inverted lower lip. Furthermore, this hard, thin, bearded tissue is not the most suitable for the construction of a new mouth.

Bruns takes the flaps from the cheeks by incisions from the corners of the mouth. The flaps are brought down and stitched in position for the lower lip. The flaps would have to be retrenched to get mucous covering for the border of the lip. The denuded cheek surfaces are covered by immediate stitching, which leaves two conspicuous vertical cicatrices and necessarily constriction of the tissues below the malar eminences. These are objectionable features.

Diffenbach excises the growth by a V incision and then makes a straight incision from the corner of the mouth nearly to the tragus, then a downward incision beneath the maxillary line, dividing all the tissues, including the mucous membrane. The entire flap is then slided to the middle line and stitched, while the gap in the side of the face is immediately sutured, leaving conspicuous scars, and doubtless a salivary fistula, as Steno's duct is cut. Syme, Buchanan, and Sedillot take flaps from chin and side of face. The method I present is, I believe, the least objectionable of any yet devised. It is the only one, except Dowd's, which permits the extirpation of the glands, through the same incisions, for the formation of the flaps. It has always the advantage of flaps, already fully covered by mucous membrane, and a vermilion border easily and promptly covered by membrane and not taken from the flaps. No denuded surface is left for stitching or granulation. The tension of the lip is slight or negative, especially after a few months. The lip is more prominent and mobile and the mouth more natural in expression.

Finally, there is not a cicatrix beyond the angles of the mouth above the inferior maxillary line in the operation on the lower lip, and the existing ones are soon covered by beard, while use soon erases the wrinkles due to them.

I commend the operation to your most favorable consideration, no matter how little or how much of the lip may be involved, and at any stage of the existence of the disease, while in all cheiloplastic work, regardless of the cause, it is an addition to the surgeon's resources.

CASE 1.—Mary R., aged 13, had a severe attack of diphtheria a few years ago in the mountains of Colorado, which resulted

in extensive sloughing of throat and mouth. This resulted in solid adhesion of the lips in their entire depth, except a small opening in the center. I operated Aug. 20, 1901, by excising the linear scar to the mucous membrane, then separating the latter for a third of an inch above and below, divided it in the center and stitched the flaps to the skin as in excision of the lip.

CASE 2.—W. H. E., a painter, aged 64. Carcinoma lower lip, extensively involving chin and glands beneath the maxilla, as shown in photograph. Duration two years. Six months previous to the operation treated with *x*-ray by Dr. Stover of Denver. He had not talked without great difficulty for eight or ten months. Operation April 9, 1904. This was the most elaborate, the most difficult, and one of the bloodiest I ever per-

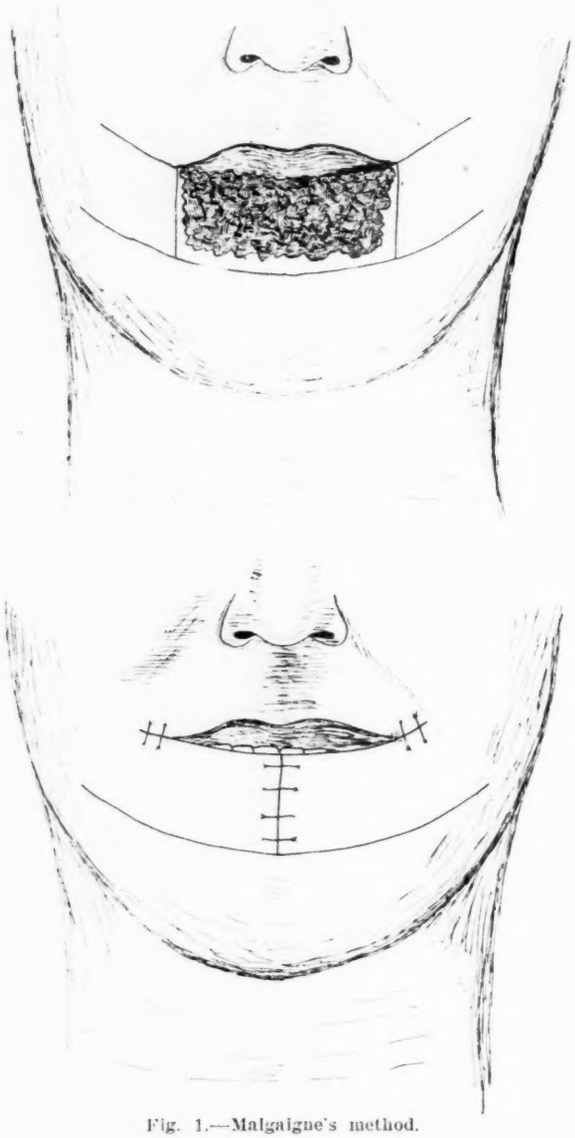


Fig. 1.—Malgaigne's method.

formed or witnessed. The principle and method were as described, but in such an aggravated case, varied to meet the conditions presented. I made a straight perpendicular incision from the right angle of the mouth to a point well beneath the growth. As the left angle was involved, I first made a slight lateral incision and then a perpendicular one parallel to the former, connecting both by a straight transverse incision, completing the excision by dissecting the tumor from the chin, leaving a large quadrangular space. To this point the operation in all such cases must be done very rapidly on account of hemorrhage. The downward and backward incision was now made from each inferior angle of the wound across the anterior

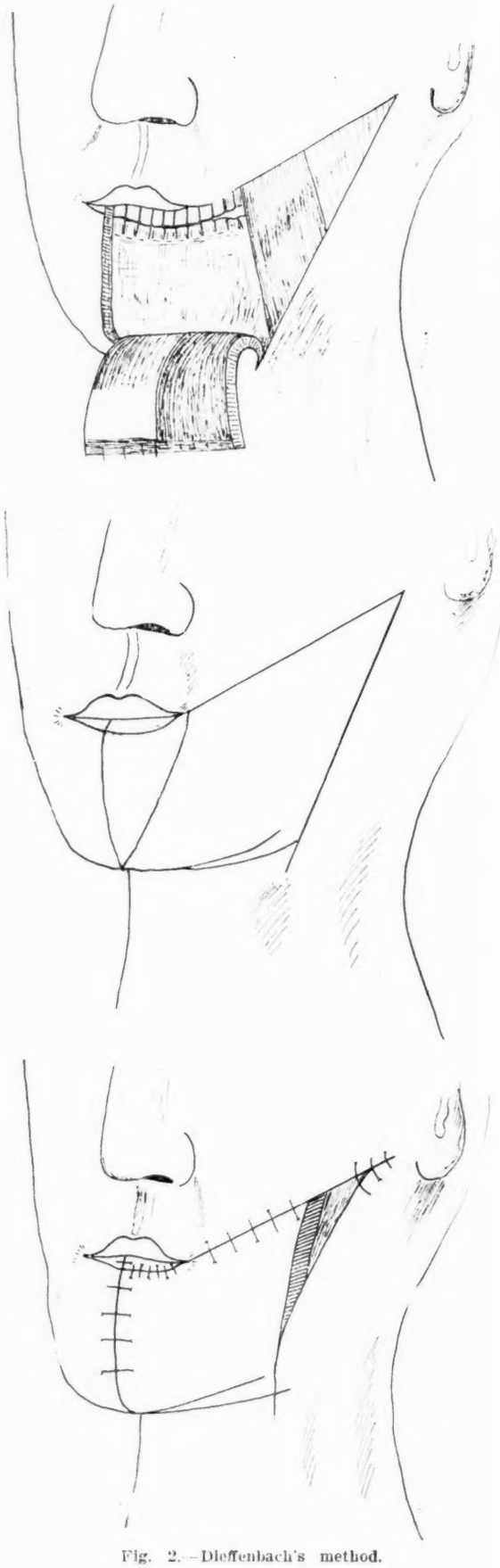


Fig. 2.—Dieffenbach's method.

triangle, the incision being longer on account of the immense gap to be filled. The cheeks were now separated from the inferior maxilla to the angles, cutting the facial arteries. In order to get free access to the extensive glandular involvement, I now made a transverse incision just beneath the apex of the chin, leaving a patch of skin an inch wide perpendicularly and nearly two inches transversely. The object of this being a fixed point to stitch the flaps to, a very important point in cheiloplastic work. The skin flap was now turned down completely from beneath the maxilla and anterior of the neck to the middle of the thyroid cartilage. The task of extirpating the glands was now begun. The superficial and deep glands, from the carotid sheath on one side to the other with hardly a break in the chain, were removed. The flaps for the mouth were now brought forward and united in the middle line with the aid of a mattress suture. Adhesive straps to the sides of the face, laced in front over gauze, may be used if deemed advisable to relieve the tension on the stitches. The operation at the angles of the mouth was now made as described, and the operation was complete, leaving not a gap to be filled by stitching, grafting or granulation. Drainage tubes were inserted in the posterior angles of the wound, and a slit in the flaps drained the submental space. Some infection of the flaps followed. This resulted in impairing the work at the corners of the mouth only, leaving the opening contracted some, but he could talk and eat with ease, and gained sixteen pounds in three months. I deferred securing photograph of mouth until I had an opportunity to repair the angles. This was postponed by the patient until he could make money to pay the hospital expenses. I kept track of him for six months after the operation. His health was good, with no recurrence. He then left Denver and I lost sight of him.

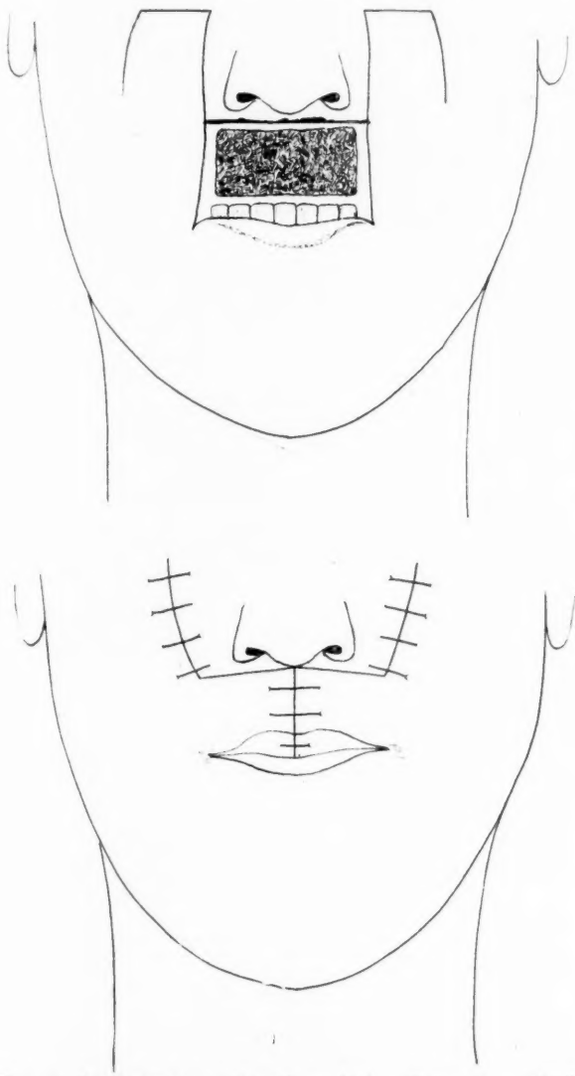


Fig. 3.—Dieffenbach's S-shaped method. Upper lip. Similar to Bruns for lower lip.

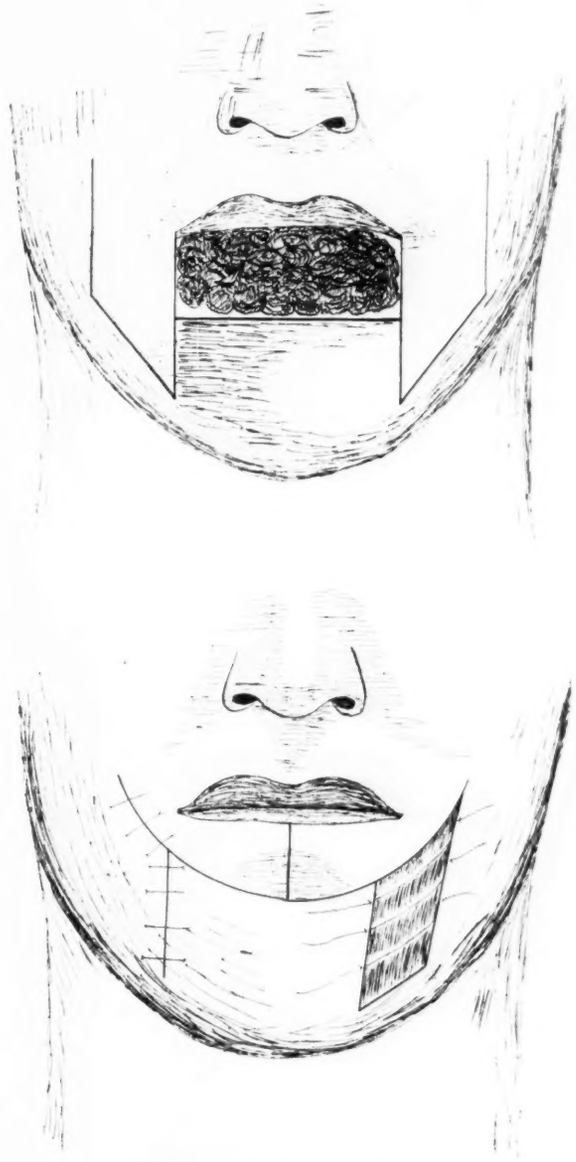


Fig. 4.—Sedillot's method.

CASE 3.—M. A. P., aged 50, bookkeeper and commercial salesman. Carcinoma lower lip. Duration, two years. Operation March 30, 1904. Six months prior to operation treated by caustic pastes, which aggravated the condition, and he was advised to try *x*-ray treatment, but declined. The entire lower lip was involved and excised by the method described and used in all my cases. The submaxillary and mental glands were extirpated. The disease being confined to the lip and few glands being involved, the incisions were not so extensive, the gap not so large, and the operation more easily and quickly performed. The result was satisfactory, the mouth being normal in size and natural in shape. Patient is perfectly well, with no suspicion of recurrence.

CASE 4.—W. B. M., aged 67. Occupation, banker and farmer. Carcinoma, involving entire lower lip, of four or five years' duration; also had lupus of left lower eyelid and ulcer below temple, which healed under *x*-ray treatment. Same treatment of lip, for six or eight months before operation, but aggravated it. Base of growth hard and edges ragged and everted. Operation May 25, 1904. Same as preceding case. Submaxillary glands involved, the submental especially enlarged and hard. Mattress suture used in this case. Progress most satis-

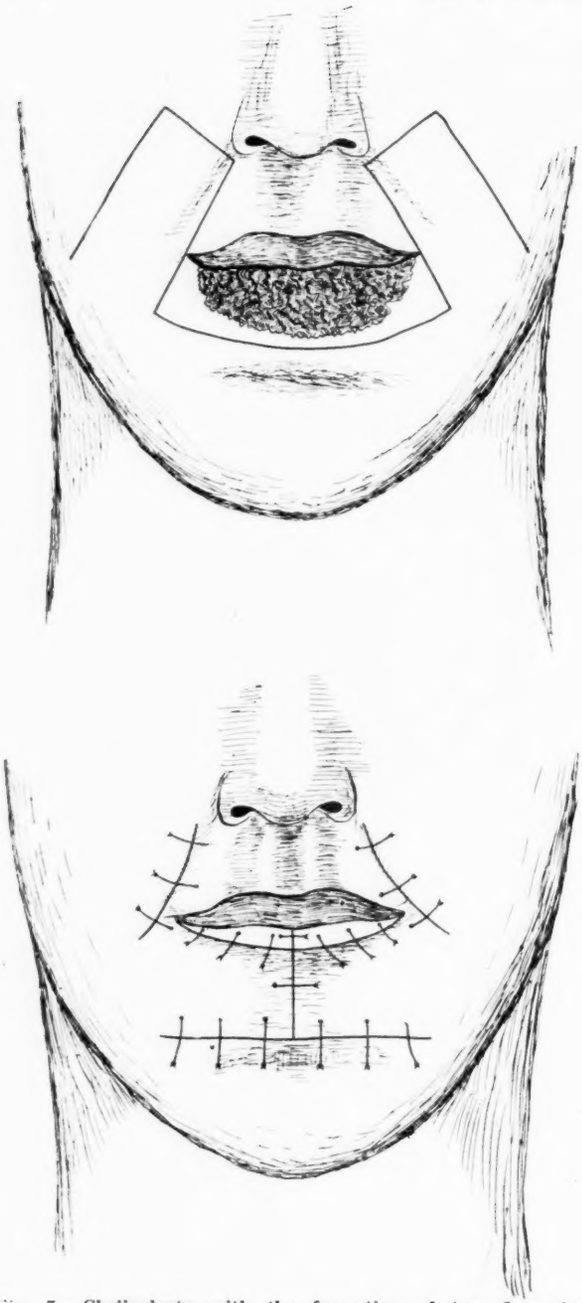


Fig. 5.—Cheiloplasty with the formation of two flaps from the cheeks (Bruns).

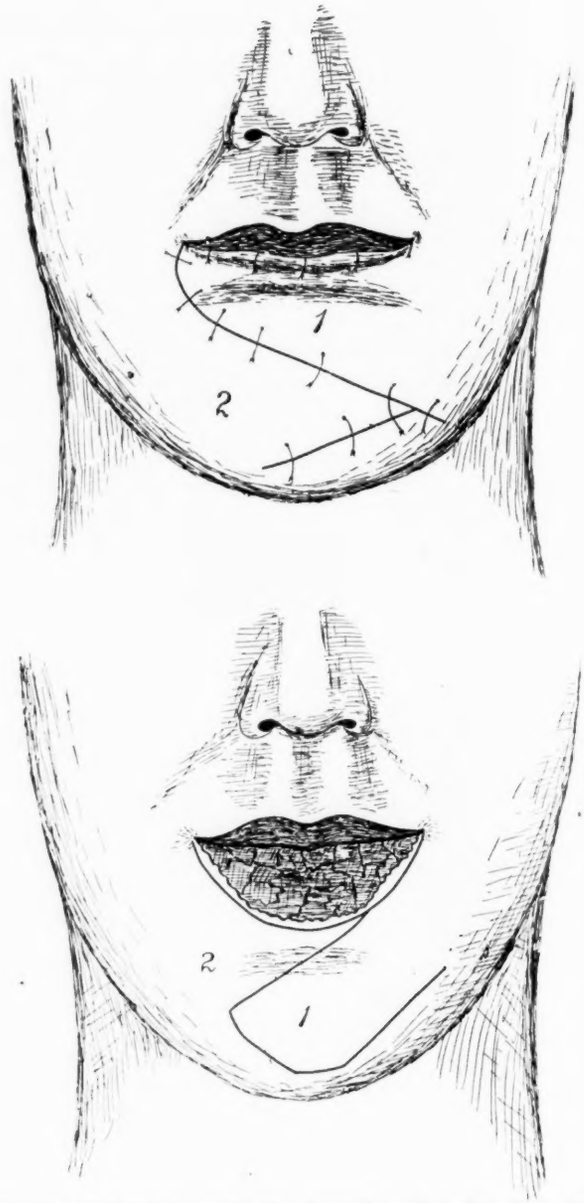
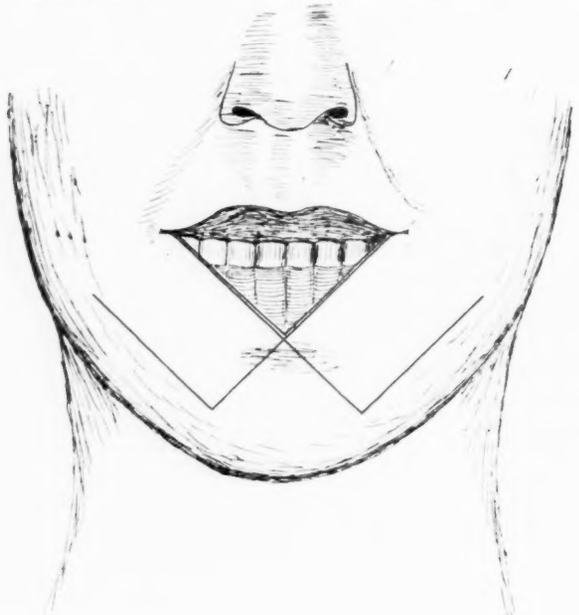
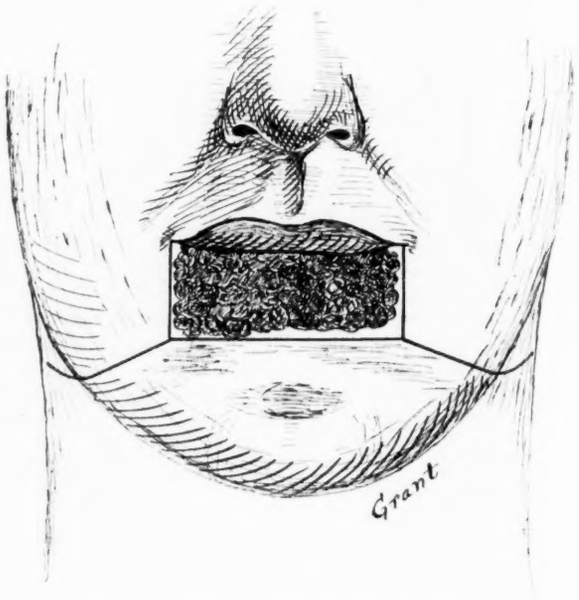


Fig. 7.—Cheiloplasty with the formation of a flap from the chin (Langenbeck).





factory. No infection except slightly at posterior angles. Primary union. Condition before and thirteen months after operation shown by illustrations. Local result excellent. No recurrence and general condition fine. Pathologic examination by Dr. W. C. Mitchell showed specimen to be carcinoma. I deemed this examination interesting and important on account of coexisting lupus of other parts of the face.

CASE 5.—W. N., aged 59, came from his home in Chicago to Denver to die among his children. He was referred by Dr. James Nevins Hyde to Dr. J. M. Blaine, of Denver, who referred the patient to me. The carcinoma involved the entire lower lip, extending slightly beyond the left corner of the mouth and invading the chin. It resembled very much in extent and appearance Case 2, but glandular involvement was much less extensive. Its duration is four years; it commenced as a small abrasion or ulcer near the center of the lip. Its progress was slow for a year or two. Three years ago it was treated by a paste in Chicago, and for some time was greatly improved. Beginning fourteen months ago it was treated for three or four months by *x*-ray in Chicago. This sensibly aggravated the condition. When presented to me in February last, it was an offensive, cauliflower-looking mass. Operation March 5, 1905, at St. Luke's Hospital, Denver, where the other operations were also performed. I was assisted in all the operations by Dr. R. G. Morrison of Denver. There was slight infection of the posterior inferior edges of the flaps in front due to imperfect drainage, and, perhaps, influenced some by the fact that the flaps, being slightly thicker than the chin tissues to which

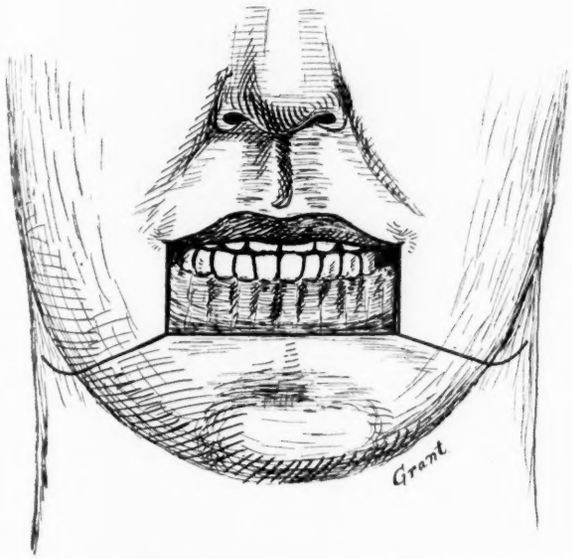


Fig. 9.—Second step of Grant's operation. The mass removed.

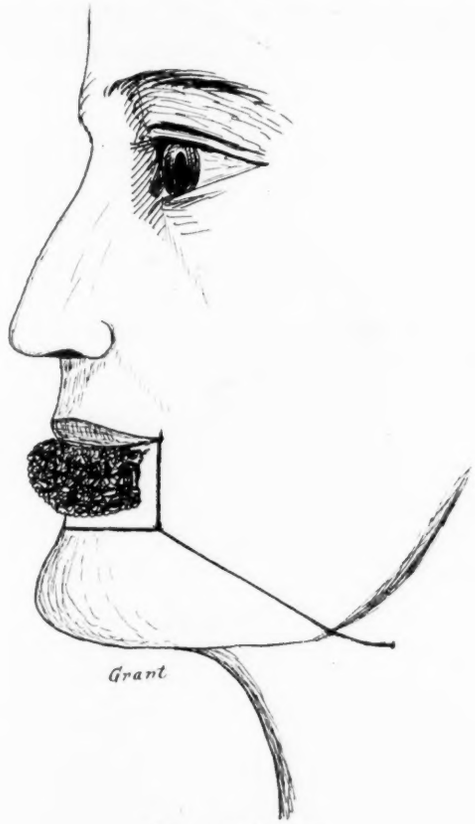


Fig. 10.—Side view.

Fig. 11.—Dissection preliminary to suturing.

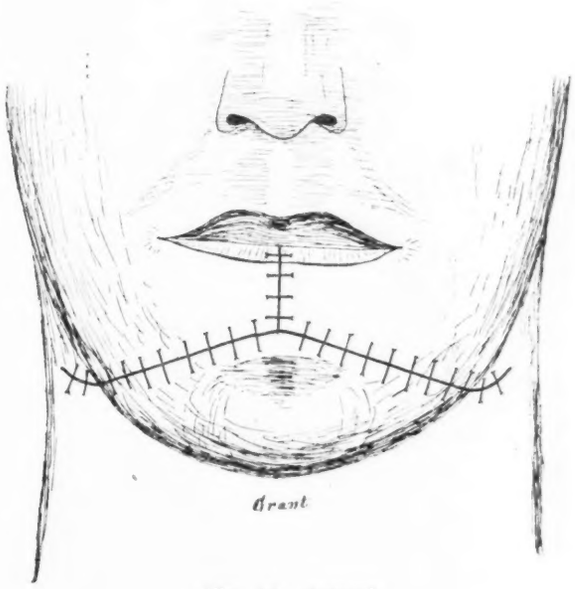


Fig. 12.—Sutured.

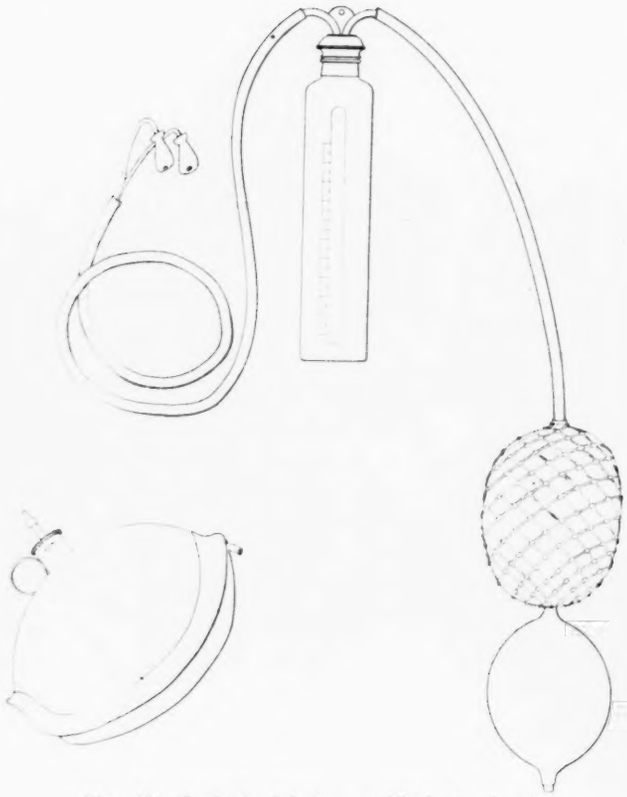


Fig. 13.—Junker's inhaler, modified by Grant.

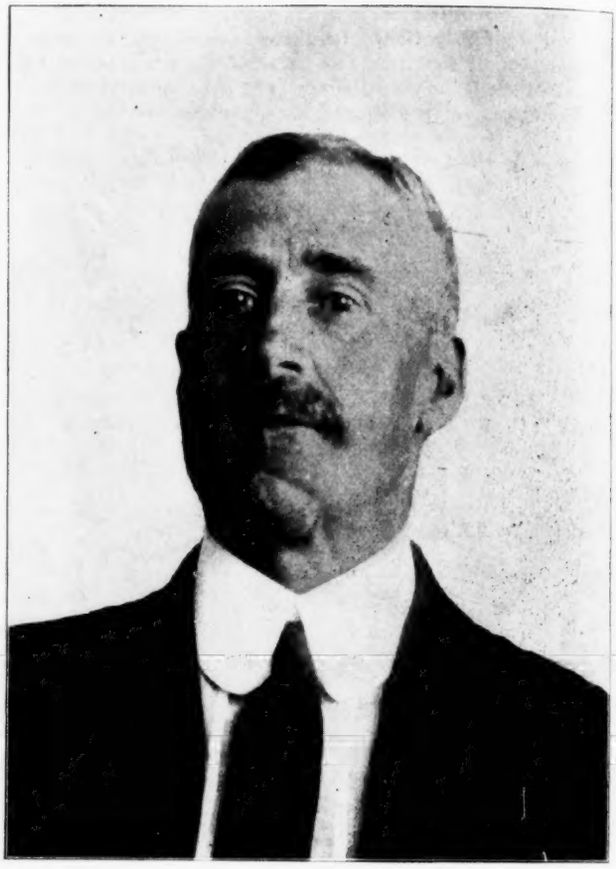


Fig. 15.—Case 3. Three months after operation.

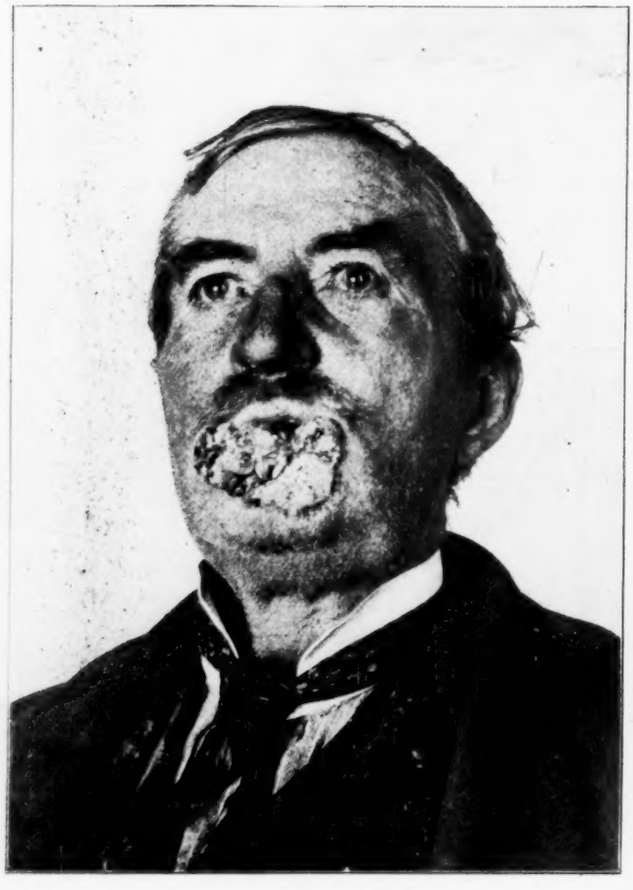


Fig. 14.—Case 3. Carcinoma.

Fig. 16.—Case 3. Carcinoma. Before operation.

Fig. 17.—Case 4. Thirteen months after operation. Entire lip involved.

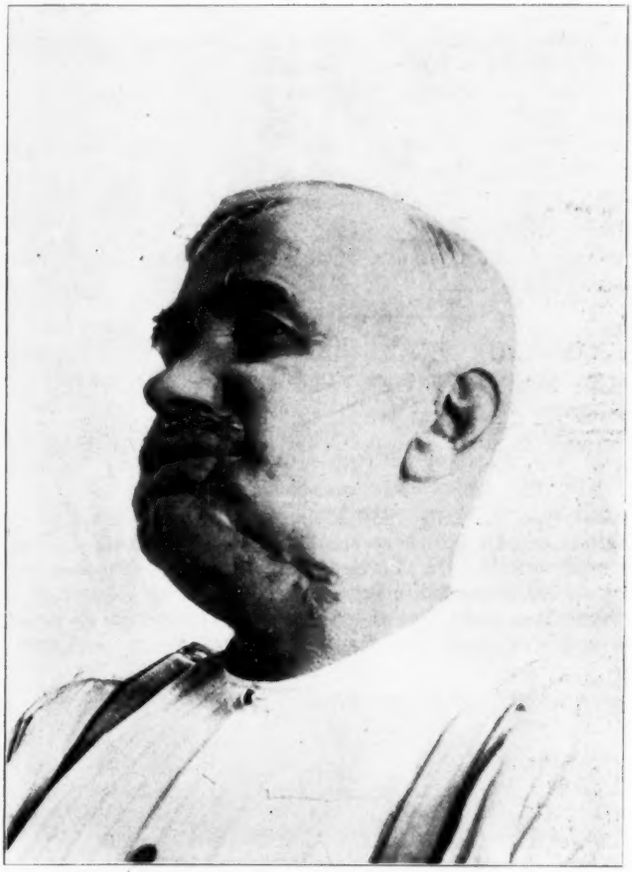


Fig. 19.—Case 5. Eleven days after operation. Shows oblique incision downward and backward and union of flaps a little to left of center, left flap being shorter than right.

Fig. 18.—Case 5. Carcinoma.

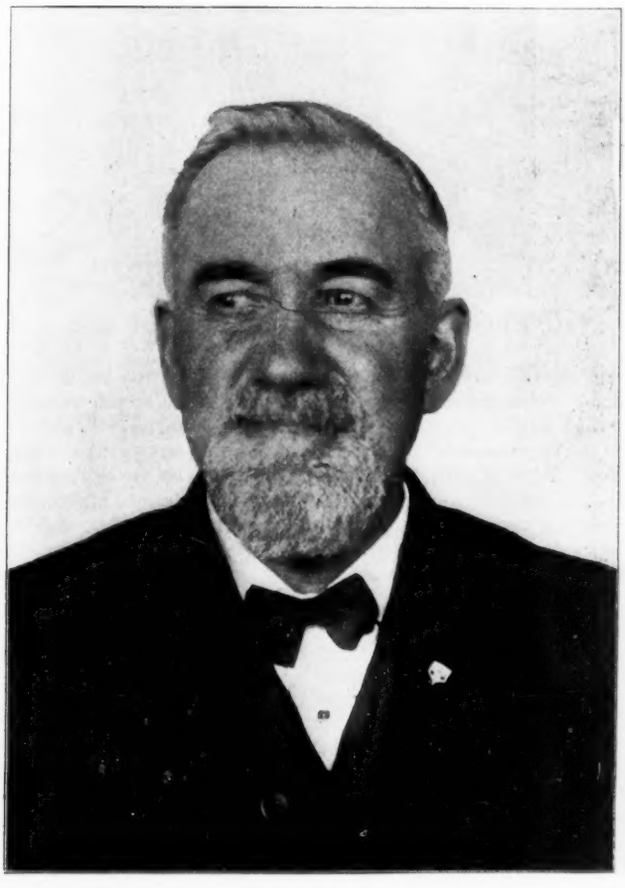


Fig. 20.—Case 5. Eleven weeks after operation.

they are stitched, perfect apposition of both edges is difficult of attainment. Yet this is not a serious matter, for drainage will protect the flaps. The further progress was satisfactory, union prompt and the result beautiful.

A few feet distant from the last three patients one would hardly observe that a serious disease and disfigurement had existed and that a severe operation had been performed on the mouth. The *x*-ray was advised and used in all cases for several months after operation. Before operation, when there is much thickening and hardening of the tissues, with implication of the glands, its use is harmful.

A CASE OF EXCISION OF THE CERVICAL PORTION OF THE ESOPHAGUS.*

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SAN FRANCISCO.

History.—The patient, M. K., aged 44 years, is a native of California and a farmer by occupation. Two years ago he was referred to me by Dr. George H. Powers, of San Francisco, on account of suspected malignant tumor of the larynx. A laryngo-fissure was done and the masses which sprang from the cords were removed, together with much of the mucous membrane of the larynx. The tumor was found to be an epithelioma. Four months later a recurrence necessitated another laryngo-fissure, at which time the wound was left wide open and *x*-ray treatment of the interior of the larynx was instituted. Despite this, the growth recurred, and in September, 1903, a total laryngectomy was done and the stump of the trachea sutured to the skin just above the sternum. Again, after five months, i. e., in February, 1904, a mass appeared in the scar and was excised. As these operations have already been reported,[1] no further details will here be given.

In June, 1904, the patient returned with a further recurrence in the scar, and on attempting to dissect it out it was found to involve the anterior wall of the esophagus to such an extent that an esophagectomy offered the only hope of its radical removal. The consent of the patient not having been obtained and no symptoms of obstruction of the esophagus having appeared, it was deemed best to defer such an operation. For eight and one-half months the patient lived very comfortably, using the phonation apparatus of Gluck, continuing daily hard work and not losing in weight or strength; then dysphagia became pronounced and he again consulted me. There was a tumor mass about the size of a goose egg in the median line of the neck, involving the hyoid bone above and extending laterally as far as the carotid vessels, and posteriorly the esophagus was invaded, while anteriorly there were two sinuses leading directly backward and discharging thin pus.

In view of the facts that the tumor was slow in growth and that the general condition of the patient was so good, a radical extirpation of the entire mass was advised and agreed to.

Operation.—March 23, 1905, at St. Luke's Hospital, San Francisco. The anesthetic used was ether, given through a tube in the trachea, preceded by a good-sized dose of morphin and atropin. The incisions made were four—two lateral, extending from the angles of the jaw to within an inch of the clavicle and about 3½ inches apart, and two cross incisions above and below connecting these. Through these incisions a block of tissue embracing both submaxillary glands, the remnant of epiglottis, the hyoid bone, the anterior three-fourths of the esophagus, and the thyroid gland were dissected out en masse. The carotid sheaths were first exposed and found to be free of enlarged lymph nodes. Several vessels were here tied off, the principal ones being the thyroids. The two submaxillary glands seemed slightly infiltrated and were removed. Then the hyoid bone and epiglottis were freed by cutting through the muscles above them and opening the pharynx. Raising the mass, the esophagus was split longitudinally to below the thyroid gland. As only the anterior portion of the esophagus was involved, about one-quarter of the lumen was left posteriorly, with the expectation of creating a mucous surface to cover the cervical vertebræ. (That such a result was obtained is shown by the present appearance of the patient.) So much skin was sacrificed that it was impossible to bring the edges together, had such a procedure been considered advisable, so they were united on either side by catgut sutures, in part to the strip of esophagus and in part to the carotid sheaths. The muscles which had been attached to the hyoid bone were drawn together by a purse-string suture, and the mucous membrane at the base of the tongue was attached to the skin margin beneath the lower jaw. The opening of the pharynx was not closed with sutures, but lightly packed with gauze. Small cigarette drains were inserted in both superior angles. Hemorrhage from the operation was insignificant and shock was not pronounced. The next day the dressings were removed and the patient fed through a catheter passed down the esophagus. Thyroid extract, gr. 1 t. i. d., was also begun. Except for some slight infection of the wound and the necrosis of a portion of the mucous membrane at the base of the tongue, con-

Fig. 1.—View of patient after partial esophagectomy.

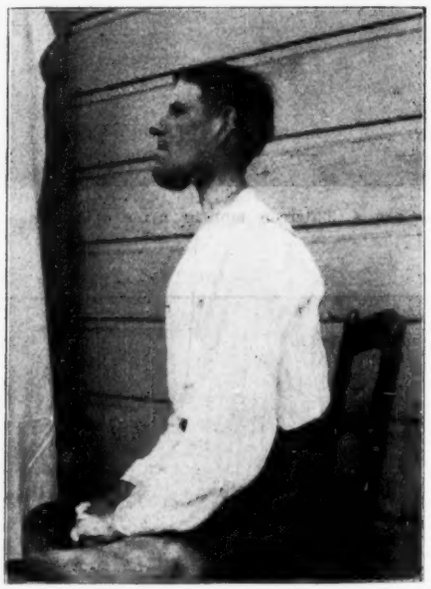

Fig. 2.—View of patient after partial esophagectomy.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Annals of Surgery, 1904, vol. 39, p. 968.

valescence was uninterrupted. The patient was up and around by the fourth day.

Subsequent History.—July 6, 1905. The patient was seen for the first time in two months. There is a mass just above the sternum which surrounds the upper end of the trachea and invades the esophagus slightly. The lumen of the trachea is only maintained by a silver tube which he constantly wears. He has, however, gained in weight and is but three pounds below his normal weight of 150 pounds. His general condition is excellent and he is able to do all sorts of work about a farm (Figs. 1 and 2). He masticates his food and swallows it by means of a simple funnel-shaped rubber tube, which is suspended above to the opening of the pharynx and below the narrowed portion enters an inch or two into the esophagus. With the kind assistance of Dr. James G. Sharp, of San Francisco, I had made a number of prothetic appliances of various materials and shapes, but we found that the rubber funnel best met the requirements. We also constructed another funnel with a valve, through which a phonation tube can be passed from the trachea to the pharynx. This is not very successful, however, as the air leaks back from the pharynx. Any apparatus which occludes the pharynx brings on a reflex spasm, causing nausea and hypersecretion of mucus and saliva. It is probable that this reflex can be brought under control by further practice, in which case a more satisfactory phonation apparatus can be employed.

I have considered the feasibility of forming a new anterior wall for the cervical esophagus, by means of skin flaps, but have rejected the idea because such flaps would have to be taken from some other part than the neck, and, moreover, they would mask the early evidences of a recurrence.

I did not temporarily close the pharynx, as advocated by some authorities, as I feared that sutures might imperil the integrity of the strip of esophageal mucous membrane, which I desired to leave.

It is to Gluck of Berlin that we owe so much in the technic of these extensive resections of the neck for malignant growths involving the larynx and the esophagus, and I feel that this paper would be incomplete without the mention of his name.

CANCER.*

W. L. RODMAN, M.D.
PHILADELPHIA.

Before proceeding to discuss the question of mammary carcinoma, it will not be far afield to consider the subject of cancer in general, especially its etiology and treatment, about which much has been written within the year, new claims having been made and old theories revived in modified forms. Perhaps the most notable communication on the subject of cancer during the past year was that of Doyen, who claimed not only that he had identified and made cultures of the germ, which he named the *Micrococcus neoformans*, but that he had prepared and used successfully in a number of cases a serum which was antagonistic to the parasite and curative of the disease. His claims have been reported on, favorably and unfavorably, by committees appointed for the purpose. The favorable report, not positive in its character, but mildly so, was made by Metchnikoff, a bacteriologist of commanding rank, but not a medical man, and, therefore, not a practical clinician. Other reports, and they have been more relevant and to the point, are adverse in every respect to the claims of this original surgeon. Attractive as the parasitic theory of cancer is and much as there is in its support, it can not be said that we are any nearer the goal than has been thought many times before. Possibly the strongest argument in favor of the germ theory of carcinoma is its supposed and apparent ever-increasing frequency in all countries where systematic records are kept, and that in this tendency barriers hitherto recognized, racial and geographic, are rapidly being broken down. In saying supposed increase, I do not mean to question the fact that cancer is increasing in America, England, everywhere, though there are many who do, and the observant must admit that this question, like all others, has two sides to it. When we reflect how common appendicitis, gallstones and gastric ulcers are to-day in comparison to what they were thought to be twenty-five years ago, when none of them were operable diseases, and, therefore, not studied with the accuracy with which they are at the present day, it is not difficult to see and to admit possibilities of error in cancer statistics. Who believes that appendicitis, gallstones and gastric ulcers are greatly more common to-day than they always have been? Who believes that they are vastly more common in one section than another? That minor differences, racial, dietetic and otherwise, are operative, perhaps to a certain extent, none will deny, but all will admit that each of the previously mentioned diseases has always existed about as commonly as they do at present. We look for them now and find palpable evidence of what we were formerly blind to. Is it believed that gastric ulcer and gallstones are more common in one section of the country than in other parts of America? Yet two surgeons in a small town of Minnesota have reported 1,000 operations for gallstones and half as many for ulcer. They have been pioneers and epochmakers in gallstone and gastric surgery, and have taught the rest of us how many such cases we have necessarily overlooked. So it may be with cancer. Certainly many cases now clinically and microscopically demonstrated to be cancer would formerly not have been thus recognized and recorded. On the other hand, as many, perhaps more, cases formerly denominated cancer are now easily demonstrated by the microscope to be sarcoma, actinomycosis, tuberculosis, syphilis, etc.

Simultaneously with the announcement of Doyen's discovery, there came a strong article before the Surgical Section of the International Congress at St. Louis, September, 1904, from Professor Orth, of Berlin, combating the germ theory of carcinoma and announcing his adherence to the cellular theory in the most positive way. It is very clear that if parasites are present they are intracellular and play a secondary, and not the chief, rôle as an etiologic factor. They certainly do not and, according to Orth, it is simply impossible that they should, bear the same etiologic relation to cancer that the bacillus of Koch does to tuberculosis, and that pyogenic cocci do to suppuration. The language of Orth could not be stronger and, considering its high source, is, therefore, quoted verbatim:

> In order to produce pus, or tuberculosis, etc., it is sufficient for the pus cocci, or tubercle bacilli, to reach suitable media; to bring about a secondary cancer it is absolutely necessary that cancer cells from the primary or from a similarly created secondary tumor shall reach the particular spot, and there continue their growth. In the case of secondary cancers we have to do with a successful transplantation of cancer cells; in the case of pus foci, or tuberculosis, there occurs a transplantation of the parasites, which do not themselves form the new focus, but they impel the local tissue, without any cooperation of the tissue of the primary focus, to certain pathologic changes. Therefore, there is an important difference between these two classes of phenomena; and one can not conclude, that since in the case of pus foci, tuberculosis, etc., parasites play a rôle, this must also necessarily be the case in the carcinomatous new growths; one can say, however, that if in cancer parasites should happen to play a part, then these

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

parasites must be of an entirely different kind than those above mentioned, because they must bear the closest relationship to the cancer cells which characterize the growth. I do not consider it impossible for an intracellular parasite to play a part here; but it is impossible for it to play an independent part. It can not possibly in itself be the decisive factor in the new growth; it can not determine the variety and character of the new growth, since the cells themselves, and only they, do this.

The transmission of a cancerous tumor from one individual to another, though often cited as evidence of the parasitic nature of the disease, proves absolutely nothing further than that a successful grafting has taken place. The tumor thus formed is the result of the multiplication of the cells introduced and is analogous in every way with epidermis when transferred from one person to another, as in skin grafting. Until cultures from the supposed germ can, alone and of themselves, independent of cells, cause a primary tumor, it is useless to insist on the infectious nature of the disease. Cases of so-called autoinfectivity prove even less, for here the host has tissues admittedly prone to epithelial degeneration, and it is easy to understand how a successful graft can follow prolonged contact.

The rarity, if not unheard of, infection of operating surgeons by cancerous patients is the strongest possible evidence against the parasitic nature of the disease. Even, however, if the parasitic nature of cancer were established beyond question, we should still be largely in the dark as to other essential etiologic factors. Every one in densely populated cities is probably daily exposed to the tubercle bacillus, and yet only a small minority are affected with tuberculosis.

That the old theory of continued irritation of epithelial tissues is almost, if not quite, necessary to explain the development of cancer I do not question. One has only to reflect that all forms of carcinoma are very generally found at points subject to persistent irritation, viz., the lips, tongue, esophagus, stomach, cecum, rectum, uterus and mammary glands. At least one excellent book has been written during the last year emphasizing the importance of heredity as a predisposing cause of cancer and showing that at least one-third of all these patients give a cancerous history. There is no question, I take it, that, with the passing of the constitutional theory of cancer and the demonstration and acceptance of its local origin, about thirty-five years ago, there began a tendency to minimize the influence of heredity as a predisposing cause. This has been carried too far, just as has been the case with tuberculosis. The disease, of course, is not inherited, but the soil is prepared and made ready should the seed be sown at a time when epithelial tissues are prone to run wild.

That race, environment, temperament, habits, trauma and possibly diet are at times influential may be allowed, but it would seem that more than one cause is usually operative.

PRECANCEROUS CONDITIONS.

Much is written, more is thought, judging by statements one hears made in private conversation and from discussions in medical societies, concerning the precancerous state, yet comparatively little seems based on indisputable facts. We hear a great deal about malignant degeneration of benign tumors, and, while it does occur, though much less frequently than is generally supposed, a careful investigation reveals the fact that very generally it is sarcomatous and not carcinomatous degeneration. Beyond the fact that superficial moles and warts, congenital or acquired, not infrequently late in life undergo malignant transformation, there is little trustworthy evidence.

J. C. Warren[1] reported a series of cases of breast cancer, 100 in number, and in only a single case was there the slightest evidence showing that a benign growth had undergone cancerous change. A small fibroma, the size of a horse chestnut and of twenty years' duration, became the seat of carcinomatous change.

I know of no other series of cases so accurately and conscientiously reported, and nearly all were examined by one microscopist of national repute, Dr. W. F. Whitney. If such malignant transformation can be shown but once in a hundred cases of breast cancer, the region of all others where it is supposed to occur most frequently, are we not, in recognizing its possibility, too strongly accentuating the probability of such change? According to Mr. Raymond Johnson, of London, the general opinion that breast tumors originally benign are prone to degenerate into malignancy, is incorrect and can not be proven. In a series of lectures delivered at the Royal College of Surgeons, of England, Mr. Johnson devoted considerable time to combating this wellnigh universally accepted view. He asserts that adenoma, which is by most authors supposed to be exceedingly liable to cancerous change, never does so, and says that no one has ever reported a case where an encapsulated tumor, as the adenoma, has been seen bursting through its capsule and infiltrating the surrounding tissues. Until he has seen such specimens and examined them macroscopically and microscopically he can not believe they are of common occurrence, if, indeed, they exist at all.

PAGET'S DISEASE.

There is, perhaps, no opinion more general or more tenaciously adhered to by physicians, surgeons and pathologists than the one that eczema or psoriasis of the nipple and areola, the so-called Paget's disease, frequently leads to cancer. The commanding position of the surgeon first promulgating this view at once caused it to be generally accepted and taught. In a paper read before the Surgical Section of the American Medical Association at Baltimore in 1895,[2] I questioned the accuracy of the observation and expressed the opinion that the Paget's disease was secondary to tubercular cancer and that the discharge from within caused the irritation without. Since then I have operated on one patient with Paget's disease, and it was undoubtedly secondary to duct carcinoma. This is the only case of Paget's disease that has ever come to operation at my hands and, in a measure, confirms the theoretical opinion I had formed. This question has become an acute one since the excellent Bradshaw lecture of Mr. Mayo Robson, of London, in December last, in which he made a strong plea for operation in the precancerous stage. His position has been challenged by several, notably by Roger Williams, who states that in only 0.5 per cent. of areolar diseases is there subsequent cancer. Two thousand cases were analyzed. Of the 100 cases of Warren, there was but one in which Paget's disease was or had been present; so at most the association between the two conditions is infrequent, and, when it does occur, the probabilities are that the external areolar disease is secondary to, and not the cause of, duct cancer. This view is supported by the investigations of Thin, Roger Williams, Raymond Johnson and others.

1. Annals of Surgery, Dec.
2. The Journal A. M. A., July 20, 1905, p. 90.

PHIMOSIS.

As fixed in the professional mind is the belief that phimosis is frequently antecedent to and causative of cancer of the penis. This would seem theoretically to be so, but is it?

Phimosis is too common a condition the world over and cancer of the penis too rare a disease for there to be any close connection between them. Less than 1 per cent., according to the registrar-general's statistics, of the deaths from cancer in Great Britain resulted from cancer of the penis.

In 1898, in my Chairman's address[3] before the Surgical Section of the American Medical Association, I called attention to the rarity of cancer of the penis in negroes. I have never seen a case; none had been treated in the Louisville City Hospital, and the recorder of the health office for the city of Louisville for a period of thirty years recorded no death from cancer of the penis in a negro. I also pointed out that the negro far more than the Caucasian was affected with phimosis; in fact, almost universally so and often to an extreme degree.

The census statistics of the United States for 1900 are even more cogent and to the point and show that, although the death rate for male negroes was 28.6 per 100,000 living, no death resulted from cancer of the penis.

This can not be explained by racial insusceptibility, for the African is more liable to both cancer of the uterus and of the mammæ than the Caucasian.

Further, the Jews, according to Roger Williams, are as liable to cancer of the penis as non-Jews. There is, at most, only a potential relation between phimosis and cancer of the penis.

In his position that gallstones may cause cancer of the gall bladder, I believe that Mr. Robson stands on ground better chosen, and yet we should not forget how rare primary cancer of the gall bladder is and how frequent gallstones are, occurring, it has been said, in 10 per cent. of all persons examined at autopsy. It is doubtless true that in only those cases of infection and chronic ulceration, with its subsequent cicatricial tissue, of the gall bladder that the danger of cancerous implantation is great. Too many such instances are reported by accurate observers to be ignored. It is only of recent years that gallstone disease has been studied with care and accuracy, generally followed by operation, and supplemented by careful microscopic examination of the viscus when cholecystectomy has been performed. That increasing and incontrovertible evidence sustaining Mr. Robson's position will be forthcoming, now that cholecystectomy is so frequently resorted to, I have not the slightest doubt. The statistics controverting this view cited by Mr. Williams and others are convincing to those who rely entirely on statistics, but, as I have already said, it should be recalled that we are almost at the very threshold of any accurate knowledge on the subject of gallstone surgery, and old statistics, while not valueless, are not necessarily conclusive.

ULCER OF THE STOMACH.

While the possibility of gastric ulcer terminating in carcinoma has always been admitted since Cruveilhier's classical work in 1839, it is only recently that such change is believed, and only now by a few, to be frequent. Opinions have yet to be crystallized on this point. Zenker thinks that practically all cancers originate in ulcers, whereas his pupil, Hauser, estimates that only 6 per cent. of all carcinomata have their origin in gastric ulcers. Mayo Robson performed gastroenterostomy for cancer 64 times, and in 38 (59.3 per cent) there was a "long history of painful dyspepsia suggesting the possibility of ulcer preceding the onset of malignant disease." Of 157 patients with gastric carcinoma operated on by William J. and Charles H. Mayo, 60 per cent. gave a good history of previous ulcer, almost exactly the same number shown by Robson's experience. The opinions of such experienced clinicians and practical surgeons are far more weighty, because they are reinforced and confirmed by direct exploration, than merely theoretical opinions or even observations made at autopsy. I called attention to this point in the Address in Surgery[4] given before the American Medical Association at Atlantic City in 1900. Subsequent experience has taught me to believe that a greater number of ulcers than I even then supposed undergo malignant transformation.

The topography of ulcer and cancer is the same, and there is no room to doubt that many of the latter have their inception in the former. This is one of the strongest possible reasons for the surgical treatment of all chronic or rebellious ulcers, preferably by excision of the ulcer, or, if multiple, of the ulcer-bearing area, pylorectomy. Gastroenterostomy, satisfactory as it is for a time, does not remove the lesion and, therefore, prevent malignant change. I have never doubted that it must, in such cases, either give way to or supplement more radical procedures.

The frequency of cancer of the cecum, and the fact, now pretty well established, that it often begins in the appendix, is an additional reason for removal of the organ when it has suffered repeated attacks of inflammation. I have operated twice in elderly men during the past six months for advanced cancer of the cecum and the evidence was positive in one case, and next to it in the other, that the malignant disease had its inception in the appendix. That cancer frequently originates in the inflammatory and cicatricial tissues about the caput coli, resulting from previous appendiceal attacks, I have not the slightest doubt. So this already fertile surgical region has within the year become of even greater interest on account of the fact that tubercular peritonitis often has its beginning in a tubercular lesion of the appendix, as demonstrated by Mayo, and the further probability that carcinoma not less frequently has its inception in a neglected chronic inflammation of this viscus.

It will be seen later that no one believes more than I in early, as early as possible, and complete operation in malignant disease, but I do not go so far as to advise operation in many of the so-called precancerous states. It is first necessary to show that a precancerous state exists and then our duty becomes reasonably clear. I would not operate on a leucoplakia of the tongue or lips, because such condition has been supposed to invite epitheliomatous change. I have seen hundreds of epitheliomas about the mouth, and have no trustworthy evidence that any, if preceded, resulted from leucoplakia. I certainly would not operate in a case of Paget's disease in a young woman of child-bearing age on account of any tendency *per se* for it to be followed by cancer. I would operate on a chronic ulcer of the stomach, preferably excising it, for the evidence here is more convincing. Further, aside from the danger of cancer, there are other even greater hazards, as perforation, stricture, dilatation, hour-glass stomach, etc.

We have been told that it is also best to operate in the preperforative stage of typhoid fever. Most of us, I

3. The Journal A. M. A., Sept. 3, 1898, p. 491.

4. The Journal A. M. A., Dec. 1, 1900, p. 1383.

fancy, find it difficult enough to make a diagnosis when perforation has actually occurred. If in doubt we should perform an exploratory operation, and the same rule should obtain in suspected cancer, the danger of delay being immeasurably greater.

MAMMARY CARCINOMA.

Diagnosis.—He who advises a woman with a tumor of her breast, especially a woman past 40, to wait and see if it be malignant is guilty of an unwarrantable and, therefore, censurable act. If he can not make a diagnosis there are others who can in nearly every case, and in all cases, by a perfectly easy, safe, and quick exploration. Let the public be educated, as they will be in time, to believe that an early diagnosis and prompt operation are both as necessary. I go further, more necessary in cancer than in appendicitis, for the latter may recover, and frequently does, without an operation, the former without surgical intervention inevitably leads to one of the most painful, lingering and loathsome of deaths. We are just beginning in America to see an awakening on the part of laymen to the hazards of appendicitis, and nearly every enlightened person knows something of its symptoms, its dangers, and the conservatism of early operation. Though the surgeon be ever so assiduous and discrete in his efforts to shield the practitioner who has dallied with the case, as is so frequentl done, the patient and his family hold the physician, not the surgeon, responsible for an adverse result. Physicians realize this and, having become more astute diagnosticians in this affection, advise early and, therefore, safe operation. There has been a most remarkable improvement in this respect in Philadelphia in the past few years. My own experience shows but 3 pus cases in 49 operations for appendicitis, most of them acute, since Sept. 1, 1904. That all were successful is largely due to the fact that, in most instances, an early diagnosis was made. In this disease we are far ahead of the English and Continentals. I was surprised to find, three years ago, that cases of appendicitis going to some of the very best English hospitals were sent to and kept in the medical wards until pus formed, when they were considered for the first time surgical cases and transferred. While this is true, however, the English are keen on the subject of cancer; they have studied it carefully and, as a general thing, rank and file, are more alive to the possibilities of surgery for its relief than are we. I am satisfied that practitioners throughout Great Britain are more impressed with the importance of and do make earlier diagnoses in breast cancer than is the case with us.

The late Sir Mitchell Banks, while I was his guest in Liverpool last July, assured me that there had been an enormous change in his practice in this respect in the preceding five years. I saw him do several operations and all were early, what we would call good operative cases. In none was there an evident tumor to the eye, though distinctly so to the touch. Two patients had moderate axillary infection of the lower glands, one little, if any, glandular involvement at all. Remarking on the favorableness of his cases, he told me of the great change for the better which had come in recent years. We can not say that this is only true of Liverpool and its environs where the great influence and teaching of that forceful and charming man were most directly felt. Everywhere I went it was the same, and I now understand, better than I could before, the operative results of English surgeons. Although the radical method of operating for breast tumor was introduced by Moore, of the Middlesex Hospital, in London, in 1867, the English were slower than the Germans, Austrians and Americans to give attention to the teachings of Moore and to put them into practice. Banks, of Liverpool, was an early champion of Moore's operation, which consisted in a large incision, free removal of skin, sacrificing the entire gland in every case, and a free axillary dissection. The muscles were not disturbed, not even the fascia covering the pectoralis major. This step was introduced by Volkmann a few years later. The English were particularly sensitive about the most important step of the operation, a free axillary dissection and removal of all diseased glands and fats. They both overrated its danger and underrated its necessity. Notwithstanding the fact that they were slow to put into practice the teachings of Moore, Banks, Volkmann, Grass and Halsted, their ultimate results were as good as those of the surgeons of other countries. This can only be explained in one of two ways: First, incomplete operations are as satisfactory in their ultimate results and yield as great a percentage of cures as complete operations; second, their patients were operated on earlier. Certainly no one believes the first proposition. At the present time, and it gives me pleasure to record it, as many, perhaps more, English surgeons are doing a thorough operation, usually Halsted's method, than is the case with us.

In addition to the usual signs and symptoms of cancer of the breast, there are two methods by which a positive diagnosis can be made: 1. Aseptic incision into the tumor has been advocated and practiced. It is neither accurate nor safe, and many cases have been reported in which infection of the adjacent tissues occurred through cells and juices thus liberated. It is unquestionably a dangerous practice unless followed by immediate operation. 2. It is much better to get the consent of the patient to a complete operation in all cases where malignancy is suspected, provided both macroscopic and microscopic examination prove it to be necessary. A competent microscopist is asked to be present, and in ten minutes he can give a reliable opinion as to the nature of the growth. During the short period of waiting, the wound should be plugged with gauze, the knife and instruments which have been used laid aside, and the hands of the operator again sterilized. It is best to send either the entire tumor to the pathologist (or to cut a portion from its center). If the report comes back *benign*, nothing further is necessary beyond suturing the wound: if *malignant*, a complete operation, preferably by Halsted's method, should at once be done. I have used this method for many years, have never known ill result from it, and by it, moreover, have, more than once, been saved the possible humiliation of removing needlessly a breast in young, child-bearing women. Twice have I been made to recognize cancer in two of the youngest subjects I have ever operated on, 23 and 27 years of age, respectively, when it had hardly been suspected. One of the best disquisitions on this subject to which I have listened or of which I know was by J. Clark Stewart[5] in his paper before the Surgical Section of the American Medical Association in 1904. I can not understand why this practice is not a more general one. It is practicable, of course, only in a hospital, it is a little troublesome and is tedious on account of arranging for and awaiting the pathologist's report. There is, moreover, I admit, the bare possibility of autoinfection when the surgeon is careless, leaving an open wound and failing to resterilize instruments and hands; but these objections are as noth-

5. The Journal A. M. A., Aug. 6, 1904, p. 365.

ing, mere trifles as light as air, in comparison to the weighty reasons for an absolutely safe diagnosis, that it may be followed immediately by a complete operation. If we limit the exploration to aseptic incision, closing the wound and waiting indefinitely to remove the breast, if malignant, then the objections that have been made are quite to the point. Such practice can not be too pointedly condemned. Aside from its immediate dangers, this procedure encourages procrastination, and this, in mammary growths, is always hazardous. Removal of the entire growth with capsule, if there be one, in the absence of a capsule the adjacent tissue, then plugging the wound with gauze and waiting ten minutes is an entirely different proposition; yet the two procedures are generally, almost always, confounded, and the palpable and admitted dangers of the one have lessened the popularity and usefulness of the other.

Prognosis.—There are three conditions, none of them sufficiently dwelt on by authors and, therefore, not appreciated as they should be by operators, materially influencing the prognosis of mammary carcinoma.

1. The pathologic variety of the growth, more than anything else, influences the prognosis for better or worse. The tendency to axillary and other lymphatic involvement is much greater in both encephaloid and scirrhus than in adenocarcinoma: hence, the more favorable results of operations for the latter.

2. The age of its host materially influences the rapidity of a mammary cancer. In the young, lymphatic vessels are numerous and patent, whereas in the old many have atrophied. Therefore, metastases occur quickly in the young, often before they are suspected, and this fact should prevent procrastination and encourage complete removal. For a better understanding of the lymph-bearing vessels of the breast in the young and old relatively, we are mainly indebted to Charles H. Mayo, Poirier and Cuneo.

3. When carcinoma involves either of the sternal quadrants or the inner hemisphere of the gland, other things being equal, the prognosis is worse than when it is in growths suited in the outer hemisphere or axillary quadrants. This is due, of course, to the danger of mediastinal infection. I must here insist, as I have done on former occasions, that malignant growths are more frequently thus situated than is generally believed.

Treatment.—It is easier to understand than to excuse the pessimism still too frequently expressed by surgeons, as well as physicians, as to the curability of cancer by operation. Some, fully abreast with the times in other respects, are far behind in this one. Internists can not be blamed for their lack of faith when surgeons frequently, and teachers occasionally, express doubts as to the beneficent results of a timely operation. There are some doing abdominal operations which were known five years ago, and yet they are apparently ignorant of the possibilities of a rightly done operation for cancer. This is most unfortunate, as it encourages physicians to undervalue the importance of exactness in diagnosis when the growth is strictly local and, therefore, entirely amenable to operation. Moreover, it encourages the running after false gods, the chief of which is the treatment by *x*-rays, which is responsible for the loss of many valuable lives that might easily have been saved. It is almost inconceivable that relatively so few surgeons are doing a comp'ete operation for mammary cancer. Yet it is eleven years since the publication of Halsted's epoch-making paper containing the most positive and convincing proof as to our duty when dealing with this pitiless enemy of womankind, and thirty-eight years since Moore advocated not so complete a procedure it is true but still a far more radical operation than is frequently seen at the present day. Operations for mammary cancer if performed, as they should be, in the first stage when the growth is small and strictly local, should furnish 75 per cent. and upward of cures. This is even less favorable than operations for cancer of the lip.

In cancers of the second degree in which the neoplasm has become adherent to adjacent tissues and in which there is moderate axillary involvement, the condition nearly always encountered at operation, are curable in 50 per cent. of the cases.

In cancer of the third degree, in which the entire breast is adherent to the chest wall beneath and the enlarged axillary nodes have coalesced into one large mass, possibly adherent to everything about them, but little can be promised. Still, operation should be undertaken, for now and then an unexpected cure is witnessed. I have had one such case myself, and recently Prof. W. W. Keen told me of a case of his in which he at first declined to operate; the cancer was so far advanced. Yet a complete operation gave perfect relief, and the woman died five years later of apoplexy, entirely free from recurrence.

The experience of another year has increased the conviction expressed in my paper before the British Medical Association at Oxford, in 1904, that the supraclavicular glands should be explored and removed, if enlarged, in all cancers situated in the upper hemisphere of the gland. It has been shown by Poirier and Cuneo that a chain of superficial lymphatic vessels passes from the breast directly over the clavicle and empties into the glands in the posterior triangle of the neck. In three such cases treated in the past year all were explored. In one there was unmistakable involvement, in the other two absolutely normal glands and fat were found. Unless there is macroscopic involvement I do not make an elaborate dissection of the neck, as I believe it to be unnecessary and to prolong needlessly an already lengthy procedure.

Extensive as these operations seem, and really are, the operative mortality can almost be ignored, as it is less than 1 per cent.

DISCUSSION

ON PAPERS OF DRS. GRANT, TERRY AND RODMAN.

DR. J. G. SHERRILL, Louisville, Ky., said that two years ago he presented a report of two cases of cancer of the intestines and was surprised to find that this condition is quite frequent. The resemblance of these cases to appendicitis is often noticeable. The glandular involvement which so frequently follows cancer is not present in carcinoma of the intestines. Sarcomata of the gut shows involvement of the lymphatic glands in the neighborhood, which is not generally believed to be true. He agreed that exploration of the breast is a dangerous procedure unless the breast is removed immediately thereafter. He has abandoned these explorations. Making a diagnosis before operation is very important, and he operates by beginning always in the axilla. If this were done constantly better results would be attained. An incision may be made into the breast and the procedure mentioned by Dr. Rodman followed with good results.

DR. J. E. BOUCHER, Hartford, Conn., reported six cases of resection of the bowel for cancer; all the patients recovered from the operation, but one died later from a recurrence. Five of the six operations for resection of the bowel were for cancer. Five of the operations were performed without any contrivance save a needle and silk, the other with a Murphy button. Five patients are living after intervals of from two

months to three years. All have been comfortable. Two of these cases were advanced, one involving the abdominal wall; in one which seemed hopeless the patient lived for six months and died from recurrence. It would seem that it is much better to resect and to remove cancer of the bowel, even at a late period, if at all operable, rather than to do a simple anastomosis around the growth, as the latter procedure at best promises very little in the way of increased length of life and, after all, is quite as dangerous as a complete removal with anastomosis. These cases all seem to indicate that complete removal of the growth is advisable on account of the slow return of some varieties of malignant growth involving the intestines.

DR. C. O. THIENHAUS, Milwaukee, Wis., does not remove a wart because it might become malignant. For cosmetic reasons, or if inflammation or irritation is present, warts should be removed. Since it has been definitely proved that all the lymph channels of the breast unite on the deeper fascia, it has become an absolutely essential factor of operative procedure to remove the pectoral major and minor muscles, and it has been somewhat surprising to Dr. Thienhaus that an attempt has recently been made to save a part of the pectoralis major muscle for the purpose of supporting the function of the arm. Furthermore, since it has been shown recently that lymph channels to the epigastric region exist which must be held responsible for the not so seldom found recurrence in the epigastric region it may be essential to extend the incision to the linea alba for the purpose of dealing with this lymphatic extension. In regard to the diagnosis of cancer of the breast, if there should be any question at all before operation, Dr. Thienhaus believes that a freezing microtome used during operation may sometimes give us the needed information.

DR. J. J. HAMILTON, Caldwell, Idaho, said that he has an old man under treatment for cancer of the rectum, who suffers very much. He does not expect to get well, but he wants to suffer as little as possible, and Dr. Hamilton would like to know what to do for him. He does not think a man of 71 could stand an operation. Although the patient is still living, Dr. Hamilton would like to have some idea of the probable length of time he is likely to be able to hold out. Would the creation of an artificial anus be wise?

DR. J. CLARK STEWART, Minneapolis, Minn., said that he knows of no operative procedure so generally neglected as a properly devised one against lip epithelioma. Epitheliomas are disseminated through the lymphatics like other carcinomata, but much more slowly. Physicians can never say by any examination that dissemination has not yet begun, and for this reason it is imperative to remove the lymphatics in every case, just as is done in the Halstead breast operation. An ideal operation against malignant disease must include certain factors. First, sufficient tissue must be removed immediately about the malignant growth; second, all lymphatics and nodes must be removed without section in one mass with the primary growth; third, a suitable plastic procedure should be done so as to secure union by first intention. Dr. Grant's operation fails in violating the second point in cutting across the lymphatics, as they run downward from the lip. Dr. Stewart has been doing and teaching for the past six or seven years a somewhat similar operation which avoids this fault. He carries the deep incisions on each side of the growth down to the point of the chin, and then backward and outward under the line of the jaw far enough to expose the submaxillary glands. These lateral incisions are then joined by one cutting the skin only, and the whole skin flap is dissected free down to the hyoid bone. From this point the connective tissue, lymphatics and lymph nodes are dissected upward in one piece, including the submaxillary glands, and the accompanying lymph nodes on each side, and last the portion of the chin between the original incisions, including the epithelioma, is cut loose from the underlying jaw. He finishes the operation as Dr. Grant has described his procedure and finds the cosmetic results very good, indeed. With this operation done early, recurrences should be very few, indeed, a striking contrast with the V operation, which deprives the patient of all chance unless the lesion is purely local.

DR. A. MCGLANNAN, Baltimore, said that in cancer of the breast we have about reached the limit of operative interference. Any improvement in ultimate results will be due to earlier diagnosis. Every single tumor of the breast should be explored. If it is benign, it could not be removed at a better time. The recognition of cancer by exploratory incision can be done by the naked eye. If the appearance of benign tumors is known a malignant one can readily be recognized, although in the breast the recognition of parenchymatous hypertrophy may be difficult. With practice, however, this can be learned, and it avoids waiting for the pathologist. The naked eye is just as good as the frozen section, and is safer because instantaneous. When cancer of the breast is found it should be immediately operated on. The glands of the neck should be taken out in all early cases. If the nearest chain of glands is not removed the operation for cancer is only palliative, and a cure is more certain to result if the glands are removed. One symptom of onset in cancer of the breast is pain, and pain in connection with a lump in the breast is frequent, so that women come complaining of the association of these symptoms. Dr. McGlannan would not make a diagnosis of carcinoma simply from a pain in the breast, but if the pain is present for three months, and there is no tumor to be found, the physician can safely say it is not cancer, but probably neuralgia or something of that kind.

DR. MARTIN, New Orleans, recently was surprised to find that Dr. Warren's statistics give cancer of the breast as being rare in the negro, as statistics in New Orleans show that they are about equal; although the negro is less liable to come for treatment. Dr. Martin believes the negro is more likely to have this disease than the white. He has seen about 200 patients and operated on 80, but every now and again he has to refuse operation. If one only stops to think of the ramifications of the lymphatics, operation would be done only with the idea of relieving pain. The absolute necessity of removing all neoplasms of the breast as soon as they are discovered is a good point, and Dr. Martin called attention to this, as he does not think they should ever be allowed to remain. Physicians and the public alike should be educated. The gynecologists have educated their patients to the importance of tumors, and surgeons should do the same.

DR. A. H. LEVINGS, Milwaukee, said that it is pretty well established that traumatism, chronic irritation and chronic inflammation are at least predisposing causes. It has seemed to him that the long continued hyperemia incident to these processes with the return of the cells to their embryonal state, their rapid proliferation and unstable condition, might explain the sequence of events in many of these cases. In three cases of cancer of the penis that have come under Dr. Levings' observation there was in each a long adherent, troublesome prepuce. He could but think in these cases that the long-continued irritation was at least a predisposing factor. In regard to the relationship between cancer and tuberculosis, it has generally been held that there is a certain antagonism between them. This seems to be incorrect, for postmortem records show that healed tubercular lesions are quite frequent in persons who have died of cancer. The family history of two brothers who consulted Dr. Levings a year ago with carcinoma of the stomach gave him food for reflection in regard to the relationship between cancer and tuberculosis. In the family there were seven children, with two, probably three, suffering from carcinoma of the stomach. The mother died at the age of 39 with pulmonary tuberculosis. The father remarried. The second wife had eight children, and she and the children are all well up to the present time. Since that, in so far as possible, Dr. Levings has carefully taken the family history of every case of carcinoma that has come under his observation; 70 per cent. show a family history of tuberculosis, whereas in non-cancerous individuals a tubercular history is present in only 25 per cent. of the cases. Some patients showed the two diseases to have been present in the same individual, either at the same or at different times. In one there was, when 5 years old, a tubercular inflammation of the hip joint, with abscesses and destruction of bone. The process healed after two and a half years. At 40 the patient had carcinoma of the breast. Another patient had chronic inflammation of the knee joint when a girl. The process became arrested after a year, and at 50 the patient had cancer of the breast. Two patients had lupus, and after several years-

an epithelioma was engrafted on the lupus patch. Dr. Levings thought that Koch's bacillus, working within the tissues even of the ancestors, might leave such a cellular weakness as to predispose the individuals subsequently to the cancerous condition.

DR. EMMET RIXFORD, San Francisco, declared that there is no question of the truth of the dictum of Watson Cheyne, "the patient's chance is in the first operation," and, therefore, the earlier and the more radical the removal of the cancerous breast the less the probability of recurrence. Patients with recurrence are not altogether in a hopeless condition. It is a matter of common experience that when the axilla is carefully cleaned out, even if it contained extensive metastases, further dissemination in that direction is frequently stopped. The majority of recurrences take place in the scar, but a considerable number alongside the sternum. Dissemination toward the mediastinum is stopped by the mediastinal glands, and it would seem to be possible in some cases to remove these glands sufficiently radically to prevent further extension, just as in the case of axillary metastasis. It has been Dr. Rixford's lot to see a number of cases in which the only detectable recurrence after radical operation was at the edge of the sternum. Resection of a portion of the chest wall in these cases showed that the tumor had penetrated the wall, but had not involved the lung or pericardium. In three cases mediastinal glands and fatty tissue were resected. In four cases in which resection of the chest wall was performed two patients are free from recurrence at the end of six months, and one at the end of two years. In five operations there was no mortality and no serious trouble incident to the acute pneumothorax.

DR. F. W. PARHAM, New Orleans, called attention to a plastic procedure described in the *Deutsche Zeitschrift für Chirurgie* a few months ago. This procedure is that of Schulten and consists in borrowing from the upper lip a sufficient breadth of mucous membrane and submucous muscular tissue attached at both commissures and containing the coronary artery, distinctly pulsating when loosened and grasped between two fingers. This flap, when sufficiently mobilized, can be easily brought down with a twist of only 90 degrees and approximated accurately to the flap which has been previously brought into place by any method the surgeon may prefer. Dr. Parham did this in one case with admirable approximation and complete covering with mucous membrane, but unfortunately a mistake in technic, in dissecting too narrow the outer part of the flap in order to bring it down with less strain, resulted in cutting of the coronary artery and the death of part of the flap. This can be avoided by steering widely when approaching the commissures, from the midline of the lip in making the two parallel incisions which mark the width of the flap. It might be supposed that the upper lip would be much damaged, but it is remarkable how little appears to have been removed when the margins of the gap in the upper lip have been accurately approximated. Dr. Parham said that in New Orleans the now well-known Doyen serum was given a rather extended trial in some eight cases. Dr. Doyen furnished enough of the serum for test by a commission to be appointed by him. The results will be given in fuller detail on another occasion, but the conclusions in these cases were absolutely negative.

DR. E. M. SALA, Rock Island, Ill., reported the case of a man who cut his throat with a razor, cutting through the larynx and esophagus, but missing all the important blood vessels. He was brought to the hospital after having been sutured up on the outside with silk. Forty-eight hours after the first sutures were inserted the entire wound gaped open; it was then sutured with silver wire. These sutures also gave way and they had to deal with an open wound. The man was fed through the neck with a tube for two weeks. He wrote a note, asking if milk was all he was going to have to eat, and was told "yes." He wrote: 'Well, I can take that without the tube." A nurse brought him a pitcher of milk and he doubled his chin close to his chest and drank the entire contents of the pitcher. From this time on the tube was abandoned, and by closing the false opening in the esophagus the man was soon able to eat anything. He remained in the hospital six weeks and the cut opening in the esophagus entirely healed up. He left the hospital with a small external opening in the larynx, which no doubt also healed soon afterward.

DR. JACOB FRANK, Chicago, stated that he had a case similar to Dr. Terry's about five years ago, which he exhibited to the Chicago Medical Society. He operated for cancer of the larynx, removing the larynx and the esophagus. The important point is, that after the operation the patient was able to articulate sufficient to be understood in a room with a seating capacity of 300. There are some other cases on record of a similar nature. The first person to have called the attention of the profession was Dr. Solis-Cohen of Philadelphia. In Dr. Frank's case the operation differed in one respect, as he tried to close the wound, but Dr. Terry did not. It might possibly be that this was the reason for the re-establishment of false vocal glands. He could notice in the granulating of the wound the formation of little bands which took the place of the vocal cords.

DR. CHARLES A. POWERS, Denver, did not agree with Dr. Rodman that cancer is not liable to develop at the site of leucoplakia of the tongue. He thinks that a patient at or beyond midlife with a persistent lingual leucoplakia is in greater danger of cancer sooner or later than one who has no such lesion.

DR. RODMAN said that it is always a disadvantage to have the hands of the assistant in the way, and he has a scheme for controlling hemorrhage in harelip operations which could very well be employed here. It makes the operation practically bloodless. He said that Dr. Stewart misunderstood him; he said nothing about the removal of the glands. All operations should be supplemented by removal of the glands, and he never operates on the penis without exploring both groins. Dr. McGlannan spoke of pain in mammary cancer, but pain is no more a feature of cancer of the breast in the early stages than it is of an adenoma or a fibroma. That is the reason why early diagnosis is not made more frequently than it is, as people expect there should be pain. It is only when the cancer has become adherent or ulcerating, or both, that there is pain, and if one waits for pain the propitious time for operation has passed. Dr. Rodman agreed with Dr. Rixford that resection of the costal wall may be necessary. He had one such unhappy experience, where he resected a part of the sternum. This is only justified in a small percentage of cases. He did not say that leucoplakia was not followed by cancer of the lip; he said it is not followed by cancer so often as to make it wise to operate in all cases of leucoplakia.

DR. GRANT said that there is no difficulty, by any of the methods in use, in removing all the diseased tissue of lip, cheeks and chin. It is a more serious problem to secure suitable flaps, and to make a good, presentable and useful mouth. If the flaps should, as might happen in all methods, be too broad, it is easily remedied by retrenching the flaps. The hemorrhage in the first stage of the operation, in bad cases, he controls partially by tissue pressure forceps. The posterior blade, long and conical, is thrust through the cheeks or tissues from inside, and clamped to the broad anterior blade. The temporary ligatures suggested by Dr. Rodman are always convenient and useful. Dr. Grant cut both facial arteries in three of the cases reported, and it did not interrupt the satisfactory healing of the wounds. In the upper lip the diseased tissue is excised by same method as the lower, and the triangular flaps are formed by making the incisions from the superior angles of the wound, upward and outward. Only very exceptionally is the upper lip the primary seat of disease. In the usual condition he has an absolutely reliable, fixed point for the flaps in the preservation of the chin tissues, to which the flaps, with a mucous membrane already intact, are secured; and when necessary for enlarging the mouth (to fit loosely the first three fingers of the hand when inserted flat), the operation at the corners of the mouth is ample and gives a ready, easily applied mucous membrane to the vermilion border of the lips. It is better than the procedure of Langenbeck, in which the mucous membrane is taken from the upper lip. In order to make this flap secure it is best to leave the base or stump adherent to the upper lip while adhesion is taking place to the lower. When this has occurred the stump is freed from the upper. This necessitates fixation

of both lips in the meantime, and necessarily interferes with feeding the patient, and with cleaning and irrigation of the mouth. A detached flap is never so certain to adhere and heal satisfactorily in this locality; while the operation at the corners of the mouth accomplishes the double purpose of perfecting the size and shape of the mouth, and giving a well nourished, certain covering to the lips, and interferes in no way with the care of the parts and administration of food during the healing process. The suggestion to remove lymphatics with the primary growth *en masse* is impractical in this locality. Neither is it important, as the submaxillary glands, which are the new foci of infection, are promptly extirpated. The *x*-ray was used in all these cases except No. 3, and aggravated the condition in all, causing a more acute inflammatory condition, and, Dr. Grant is satisfied, more rapid extension of the disease. He believes this true in all cases except when the disease is recent and superficial in extent, while after operation it may be useful in preventing recurrence, and for this purpose he advises its postoperative use in all cases. Dr. Grant said that he purposely refrained from discussion of the causation, as he has nothing new to offer. All the patients were inveterate smokers, using the pipe, except the last one, who for twenty years had displaced it with a cigar. Dr. Grant has never doubted the evil influence of persistent irritation as a causative factor in the malignant degeneration of an ulcer, or tissue, originally benign; and he does not think it inconsistent with the existence and influence of a specific cancer germ.

DR. TERRY declared that we need something to urge us to more radical measures. He does not feel discouraged by the condition of the patient which he showed, and still hopes to be able to do something further of value to him, perhaps by resection of the upper part of the sternum.

A PLEA FOR NATIONAL AND LOCAL BOARDS OF SCHOOL HYGIENE.*

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The altruistic ideal is the noblest conception of man, and preventive medicine is its most practical application. Thus, altruism is the natural rôle of physicians, in that it is their natural function and their duty to be guardians of the public welfare; to see to the eradication of diseases and their attendant evils; to influence public opinion, public sentiment and public action in all questions pertaining to the health and education of the people, and to make the public familiar with the causes of disease, degeneracy and crime, together with the most important measures for their eradication and prevention.[1]

Science has clearly demonstrated that much of the disease and misery of mankind is avoidable—that disease is a terrible punishment inflicted on the human family for living out of harmony with the laws of health. When one pauses to consider the enormous annual loss to the government and to society through disease; the terrible suffering attended by the temporary or permanent, partial or complete disability of individuals; the tendency to degeneracy and crime in succeeding generations; the deaths, the losses in the business world, due to the serious interruption to business; the money value to the government from the wasted lives that are needlessly sacrificed, it becomes evident that it is the duty of the government to protect its people from these perils—preventable diseases.

Let us consider, briefly, the enormous loss to this government through disease. It is estimated that the minimum value of each wasted life is, at least, one thousand dollars to the government. Professor Osler estimates that of the seventy million people of these United States there are always one million two hundred thousand people afflicted with tuberculosis, out of which number at least one million will die of this disease. Thus the value of lives lost from tuberculosis would be upward of ten billion dollars—and this does not reckon with the physical disabilities that appear in the offspring of parents so afflicted.

Then, too, think of the numerous other preventable diseases which collectively claim a much greater number of victims each year, and some conception will be formed of the appalling loss to the government through disease.

Because of the relation of school hygiene to the science of human development and to preventive medicine, and because of their interrelations with the problems of government and of law, of the business world, of criminology and of sociology, there are no subjects of such vital importance to mankind as the education and hygiene of the developing child.

All through infancy, childhood and youth, there is a struggle for existence, due to the development of the alimentary and other systems. During this time, great strides are made in physical, intellectual and moral growth. It is a period of stress, in which the vital resistance is lowered against the inroads of disease; a time when permanent disability is most likely to be incurred.

Every human adult is a composite result of heredity, prenatal influence, environment and disease. Consequently, because of the unfavorable heredity and home environment of many children, the close connection between their mental and their physical development, and the fact that these children spend a greater part of their waking hours at school—in cities the average school year is two hundred days, in villages one hundred and eighty days—it seems reasonable to impose on the public schools of our country the burden of ameliorating these conditions. Thus, not only does school hygiene become intimately associated with the evolution of the individual, but it seems also to be one of the most important factors in the problem of education and of preventive medicine—indeed, of society itself, since the progress and vigor of nations largely depend on the education and environment of childhood and youth.

For the year ending June 30, 1902, the Commissioner of Education reports that the total enrollment in schools and colleges, public and private, was 17,460,000. Of this number, there were enrolled in public institutes, supported by taxation and funds belonging to states and municipalities, 16,041,016. Moreover, in addition to the enrollment in schools and colleges, as given above, there were pupils enrolled in special institutes, more or less educational and practical in character, 620,840, making a total of 18,080,840. Thus between 20 and 21 per cent. of the entire population and about 72 per cent. of the entire number of persons from 5 to 18 years of age are enrolled in the common schools of our country—all of whom are receiving the education and physical development that shall determine their value to society and to themselves.[2]

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* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. I have quoted rather extensively from my paper, "A Study of School Hygiene, Development of Children, and preventive Medicine," Amer. Med., Nov. 7, 1903. Again I must acknowledge my indebtedness to the various authorities from whom I have imbibed many of these ideas.

2. The aggregate of common school property is more than $601,571,307 in 1902, its increase being $225,000,000 over the year 1901. Expenditures for sites, buildings, furniture, etc., $41,758,488, or a percentage of 17.7 per cent. The population for 1905 was 84,000,000.

Each year adds to our knowledge as to the causation of disease. When we think of the homes from which many of the children come—homes which are hotbeds of disease and filth—and that these children bring in their clothing and on their bodies the germs of disease, body vermin, and other insects, we must realize that if all matter rich in pathogenic bacteria and insect dangers probably none can equal or compare with the average dust of school rooms as a source of the preventable ills from which we suffer. Then, too, there are other evils of a faulty school hygiene due to defective heating and ventilation, to overcrowding, to the mechanical irritation to the respiratory apparatus from the dust, or from dirty lavatories, to eye-strain, ear troubles, coryza, catarrh, infectious diseases, postural diseases incident to faulty school furniture and to faulty positions in sitting, writing, studying and standing; all of which may cause avoidable diseases leading to permanent disability, degeneracy, crime, or even to death.

Is it not, then, imperative that a better system of school hygiene be instituted in order that children may receive their "absolute civil rights"—the right of personal security and protection from the government against avoidable evils which cause more or less suffering and permanent injury to their physical or moral health—preventable injuries against which neither parents nor children have any redress; and also that they may receive every opportunity to develop sound minds and sound bodies by means of a school environment, education and physical training that shall minister to their maximum development and place them in right relation toward society?

The defects of the present system are: The ignorance of the average school board of special technical and scientific knowledge as applied to the science of human development and progress; the phenomenal extravagance incident to this ignorance and to so many separate managements; the want of organization; the lack of proper medical supervision of the school hygiene and of the needs of the individual children, and the ignorance of parents and teachers of the requirements of children for their best physical development. Is there not, then, a need of radical reform? To bring about this reform will require long, intelligent and persistent effort on the part of the medical profession, that the public may be made to realize that the individual welfare depends on the general welfare and vice versa, and that no one class can be made to suffer without producing a certain reaction on every other class.

The momentous question, then, becomes: What are the changes essential to the evolution of a better system? They are many and radical. This evolution of a better system implies a practical working ideal very much in advance of the present conditions. There must be an elimination of those elements inimical to the social welfare and such improvements as may be found expedient, if the school ideal is for every child to attain perfectly his maximum development, normal impulses, and such self-control that he may become a useful member of society. It is, then, self-evident that the essential reform needed in the evolution of a better system is the practical application of preventive medicine and that broadly educated physicians must become the chief directors and supervisors of such a system.

If preventive medicine is to assume its legitimate place among the social forces, some method of procedure must be adopted which shall place physicians in authority over these matters. This can only be brought about by organization, local and national. To this end, I would submit suggestions as to the establishment and work of such an organization, leaving the details and perfecting of the system to be worked out by the profession and by the public.

Such a system should be supported by the general government and not by the school fund; therefore, there should be a national board of school hygiene and preventive medicine to be composed of representative, non-partisan physicians, selected because of their general efficiency and knowledge—the commissioner of education and the commissioner of public health, when we have one, as members *ex officio*. It should be the duty of this national board to make investigations in school hygiene, in education in its relation to human development, and into the causes and means of prevention of contagious and infectious diseases and of degeneracy and crime; to indicate measures of national importance in preventive medicine; to frame laws for the protection of the public health; to be the center of information of all matters relating to the development of children, school hygiene and public health; to be an authority on the scientific and sanitary construction of school buildings and school furnishings after the most approved pattern, and to furnish architectural plans and estimates of cost for the construction of these school buildings and their furnishings. It should superintend the civil service examinations of all physicians employed in the various departments of the service, and it should have charge, also, of the examination for school janitors; afterward issuing certificates to the successful candidates for examination; and it should publish circulars and bulletins of information to be distributed by the various departments of the service, etc. The several departments of investigation of such a board should be assisted by advisory boards composed of intelligent and broad-minded men and women, experts in the work of their special department; men and women, in a word, who have attained to success because of their special ability in their own line of work.

A state board of school hygiene and preventive medicine should be established whose duty it should be to supplement the work of the national board. It should supervise the choice of location and the construction of the school buildings of the state on the best hygienic principles and plans outlined by the national board; it should help the national board to frame laws for the protection of school children and the public health, and it should promote the necessary legislation to make them effective in the state; it should have general oversight as to the efficiency of the work of the physicians who hold public offices under this system; it should have the power to close insanitary schools; it should determine the fitness or unfitness of incorrigible children for attendance in the public schools; it should be the final repository of all statistics and records of children after they have left the schools; and it should make a special, careful, systematic classification and study of these records with reference to their sociologic value in the science of human development.

The local board of school hygiene and preventive medicine should be composed of non-partisan and successful business men and physicians, and the municipal commissioner of health, or health officer, should be a member *ex officio*. It should be the duty of this board to supplement the work of the national and state boards; its duties should be such as are ordinarily performed by the school board of the municipality and not otherwise provided for by the state and national boards. It should be the repository of the individual records of all school

children while they are enrolled in the public or other schools; and when the children leave school permanently it should forward these records to the state board, where they should be kept on file during the lifetime of the individuals whom they concern. Should the child leave the municipality during school life, his record should be transferred to his new school board of hygiene and preventive medicine.

Another important feature of this system should be the establishment of a complete federation of all boards of school hygiene and preventive medicine in the state with the state board, with the local, state and national boards of health, and with the state and national boards of education. Such a federation should be so perfect in all its details that the work of one board would supplement the work of the other in all matters of common interest; and if for any purpose the school record of any given individual be desired for the department of justice or for scientific research in sociologic problems it should be possible to obtain it on very short notice.

As the education of teachers in the principles of hygiene and preventive medicine must necessarily be very superficial, and as the school age includes the period of greatest development, during which the children must spend a large part of their time in the school buildings, it would seem imperative that if only one principal can be afforded in any school building this individual should be a graduate physician from some reputable medical school. It is certainly to be supposed that the well-qualified teacher is better able to supervise the general education of the child without the constant oversight of the superintendent than to care for its physical needs in accordance with the principles of hygiene and preventive medicine without medical supervision.

The work of a medical principal, apart from the oversight of the general educational work of his teachers and co-operation with the local and state superintendent of schools, would be to keep a vigilant guard over the health of the pupils and thoroughly to examine physically and otherwise every applicant for admission to the school, after which examination the grade, class, exercises, diet, amount of sleep, amount of study, etc., should be prescribed, and, if there should be any disease, malformation or other physical defect present, requiring the services of a physician, the child should be referred to the family physician for treatment, and such treatment should be insisted on as long as need be. It should also be the medical principal's duty to inspect the hygiene of the school building and of the grounds and to supervise the heating and ventilating systems and to control the work of the janitors. He should have the power to close insanitary schools. It should be his duty to report to the local health board officer all pupils who are absent from the school because of contagious diseases, and no pupil absent from such cause should be allowed to return to school without a written permit from him. All private schools should come under these public-school regulations.

There should be some systematic plan followed in making the physical examinations admitting pupils to the schools. The following outline is only suggestive of the scientific possibilities which this work opens up for the promotion of a social ideal through scientific investigation and the application of preventive medicine in the development of children.

Such an examination should ascertain the hereditary data. This should include the nationality, family record and the home environment, and would aid in determining the relative importance of any physical abnormalities found in any individual case. It would also aid in determining the probable reaction to educational influences of those who are naturally weak, backward, degenerate, depraved and criminal. The first physical examination should include the Bertillon system of physical measurements and descriptions, modified and expanded until they best meet the morphologic, physiologic, pathologic and sociologic requirements. This and subsequent examinations should investigate the physical states as to diet, quantity and quality; condition of digestive system; general metabolism; condition of the blood and organs of circulation; condition of excretory organs; the response of the muscular system to dynamic tests; the reaction and reflexes of the nervous system; the physical and neurologic activities, including the physiologic data, which deal with the fundamental elements in the character, morality, education, religion, reason, memory, and the sentimental bias; the relative capacity of the various organs to the physical demands made on them; the pathologic data, which includes the summing up of all the abnormal findings; and the prognosis as to the probable development of the individual along normal or abnormal lines. The fatigue of children at various times during the school day should be registered by means of the ergograph.

There should be a county medical superintendent whose duty it would be to visit the country schools and perform such duties as would devolve on the medical principals and superintendents of city schools. He should also give out literature and printed instructions for the aid and education of the parents, that they might know the best home care to give their children.

Further, to aid this campaign for the maximum development of our school children, it would be necessary to enlist and organize the various social forces to help on the work of preventive medicine. This means education—the education of parents and others as to their responsibilities toward the children and the public.

Club women should be interested in forming health societies and sanitary squads for the inspection and improvement of the neighborhood and home environment of weak, backward, sick, degenerate, incorrigible and vicious children, and to raise funds, that those needing special medical care may be provided with the means for such treatment. There should be efficient factory regulation and inspection regarding minors; and dependent, sick children should be provided with efficient medical, surgical and hospital treatment. So, too, discrimination should be practiced in favor of the nervous, weak or backward child. When children are known to be subjected to constant ill treatment from their parents, measures should be taken to have the parental rights forfeited.

The pamphlets of instructions on home and public hygiene and preventive medicine, treated in a popular manner, issued by a national board of school hygiene and preventive medicine, should be distributed to parents through the medium of the local boards of school hygiene and preventive medicine. Each school should be made a distributing center, from which these pamphlets would be carried by the children to their parents.

There should be printed forms, or circulars of information, on the special hygiene corresponding to the normal development of every period of school life. These periods should be divided into six months or a year each. These circulars should be given, one to each child, according to his age, by the medical examiner, for

comments in regard to the care needed in any given case. In this way there could be brought about intelligent co-operation between parents and educators.

Finally, special provision should be made by the state for the separate education of the idiotic, depraved, insane, epileptic and the natural criminal.

There should be industrial homes for the incorrigible, friendless, and homeless girls and boys; a state board of correction and charities; a public school for dependent children; a public school system of compulsory education; and more stringent laws for the protection of the health and lives of children. Such a medical supervision of schools and school children should do away with the closing of schools in epidemics and should be one of the most important measures for checking the spread of contagious diseases. Crime would be diminished, because those children with the stigmata of degeneration and the natural criminal instincts would be discovered early in life and every effort known to science, ethics, and education used to reclaim them. Moreover, those who are subjected to frequent punishment would have justice done them if physical causes were found to be the basis of their various troubles; nervous children would not be forced to practice music or other nerve-racking exercises, tending to the irreparable injury of their nervous systems and general health. So, too, diseases would be discovered in their incipiency and the curable pathologic processes checked or cured, thereby saving many to lives of usefulness.

Such a system of school hygiene and preventive medicine would not only develop the mental, moral and æsthetic status of children and transmit a better heredity to posterity, but it would also put physicians in their true professional relation to society and open up a very broad field of usefulness to an overcrowded profession.

DISCUSSION.

DR. C. F. WAHRER, Fort Madison, Iowa, said that Dr. Smith's paper reminded him of a question that once came from an unknown place: "Cain, where is thy brother Abel?" And the answer was, "Am I my brother's keeper?" Physicians, school teachers, and a good many other people are always trying to do something for the betterment of mankind, even if it does make a strong hit at their financial success. It is a question how much we are responsible for our fellowmen, in how much we are our brother's keeper, and how much we are bound by the ties of humanity to better conditions in general, and how much we can really do. It seems in our law-ridden country, which has so many laws on its statute books, that our laws are increased and modified in various ways, and yet the Utopia of our ideas has not been reached. Legislators usually do nothing they are not compelled to do. The legislator would far rather introduce a river and harbor bill, in which millions are involved, than to see that a thousand or fifteen hundred or two thousand dollars are appropriated for some such schemes as that advanced by Dr. Smith, and he does this because he is importuned to do it. Dr. Wahrer advised adopting the methods used by those who want river and harbor appropriations, or things of that sort, namely, addressing county senators and representatives or the national representatives and senators in Washington. Dr. Wahrer then commended the organization of the profession in the United States, and said that the people must be taught that there are physicians who can do more than sell compounds and make visits at a stated price. He said that the physician must be a factor in the community for morality and for everything that stands for the betterment of mankind.

DR. A. W. FAIRBANKS, Boston, agreed with Dr. Smith that there is great opportunity for work in the schools. He belongs to a city that was the first to introduce medical inspection in the schools, and is one of the physicians appointed by the Board of Health for this work. He said that, although there has been medical inspection of schools so long in Boston, the peculiar condition of things is that as yet physicians have little or no control over those features of school life affecting the general health of the child, such as the seating room, the physical exercises, etc. They are required to be on the watch for contagious or infectious diseases and to decide on the attendance or non-attendance of any child so afflicted, and, to a certain extent, have some power of advice as to the attendance of cases of other than contagious affections. As to physicians being principals of schools, Dr. Fairbanks thinks there is too much detail, of a non-medical character, so that the physician would have most of his time taken up with technical details of administration. In regard to the Utopia which Dr. Smith depicts, Dr. Fairbanks thinks the system would be one of great expense, and he could not, in the five or six hours of school work, cover all these details. There are 2,700 children in the schools over which Dr. Fairbanks has jurisdiction, and he finds it very hard to look after the ordinary medical details alone, and he gives a great deal more time to it than he can afford in doing that. In his work, simple as it is, it is sometimes almost an impossibility to gain the co-operation of the family physician. In reply to a question, Dr. Fairbanks said that he is one of the medical inspectors of schools and has a certain school district. There are others who have the inspection of pupils in their districts. He thinks that the physician's power ought to be greatly extended, and that all matters affecting the health of the school child should be under the jurisdiction of the boards of health.

DR. C. F. WAHRER, Fort Madison, Iowa, in regard to Dr. Smith's remarks about the ignorance of the average school board, said that the remark is not original. He asked how school boards and the laity are ever to be enlightened in regard to the things which physicians wish them to know unless the medical profession undertakes to educate them. He advised each society to have a publication committee composed of five or six members, who would give to the press the consensus of opinion on a given subject and said that in this way the garbled and incorrect statements on medical topics now found in daily papers would give way to plain statements of facts and the public would thus be educated.

DR. HARRIET GARRISON, Dixon, Ill., said that in treating of child hygiene one important point which was not brought out is that every physician should educate his immediate families. When Dr. Dixon goes into a family and sees a child needs a certain regimen for his hygienic development, she prescribes it, and gives the necessary instructions for carrying out the treatment. If she meets a girl from one of her families on the street, walking in an unhygienic manner, she asks her to hold her head erect, to throw out her chest and to step out firmly, and calls the attention of the parents to the child's defects. Every physician should be responsible for his own clientele. In this way the laity can be educated, and if physicians do not instruct each family they never will be.

DR. J. M. MCGAVIN, Portland, Ore., thinks that as we come in contact with the laity we will be more and more surprised how quickly they take up ideas. Dr. McGavin has had some experience with the Chinese here, and in one case in which a child was dying of pneumonia they said: "We want you to get that stuff that blows the air out of their lungs." They meant oxygen. He finds that the Chinese adopt new ideas very quickly. If physicians do their duty they will be astonished at the rapidity with which the laity become educated along sanitary lines.

DR. ALICE M. SMITH declared that preventive medicine rather than curative medicine should be the ultimate ideal in practice, and that physicians would lead more entirely successful and useful lives if this system of school hygiene were to be established, because people would so much rather pay to prevent a disease than to pay for its treatment after it becomes incurable. Moreover, Dr. Smith said that in this system the details would not be insurmountable, because the teachers would assume the responsibility of those duties properly belonging to them. Indeed, many teachers are just as enthusiastic and just as anxious to promote the best interests of their pupils as we are. These teachers, under the present system, are often greatly hampered by interference of principals, who insist on some procedures not suited to the best work of the individual teacher. If the school board will

gage competent teachers and demand a certain standard of excellence in results, the teachers will naturally adopt the plan best suited to obtain those results. Thus the medical principal would be enabled to devote the greater part of the time to the hygiene of the school. Dr. Smith believes that the system could be made thoroughly practical in its application and that its direct and remote results would be of incalculable financial gain to the profession and to the public.

THE RELATION OF THE WATER SUPPLY TO DISEASES OF THE ISTHMUS.*

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The attention of American sanitarians has recently been directed to the Isthmus of Panama, and it was therefore thought of interest to this Section to present the following observations relating to the water supply, also the diseases studied while I was on duty with the U. S. Marines at Obispo and Empire last year.

During the days of the old French canal company the water supply of each section was obtained from the adjacent rivers or streams and pumped into tanks and relay stations to be distributed to the buildings occupied by the French employes. The native quarters were supplied by street hydrants. The official charts indicated the position of each pumping station, tank, and their connections with the liberal network of lead piping. All these had not been in use for years and were found in need of extensive repair. After the missing parts of pumps and pipes had been obtained from the section storehouse, the marines, by several weeks' work, were able to utilize this original means of supply. The ships at Colon provided distilled water for drinking purposes, which was sent to the camps in tank cars, sterilized before filling by steam. The river and rainwater were at first only used for washing and cooking, but eventually all drinking water was supplied by filtering the river water and sterilizing it with the Forbes-Waterhouse field sterilizers. Former employes of the canal company said that rainwater collected from the galvanized iron roofs through broad gutters into tanks and cisterns, was always an important source of potable water. The marines were quite dependent on it for washing and cooking before the river water became available. The several sections along the line, with their native population of Jamaicans, Chinese, Indians and Columbians, rely on rainwater to a great extent for their potable water. Every house has its unique collection of old barrels, tanks, dredge buckets and cans filled with rainwater containing myriads of larvæ and pupæ of the *Culicidæ* and *Stegomyiæ*.

A few springs and wells were found in use in the canal zone and vicinity of the cities. The springs are surface drains and readily contaminated, illustrated at Obispo, where two such springs were condemned for use, having been polluted by a garbage sink and latrine of the camp. The well at Empire, draining a square of houses and stable, was prized for the sparkle and flavor of its water. Needless to add, it showed, on examination, a rich nitrite contamination, and was condemned for the town use when an epidemic of dysentery appeared.

The sanitary condition and water supply of Culebra, as we observed it under the control of the new French company, was probably a good example of these features of each section during the days of the original canal company. It was not surprising to find that several epidemics of yellow fever, smallpox and dysentery had occurred here. The hill at Empire was occupied the year before the arrival of the marines by a battalion of Colombian soldiers and I learned they had many deaths from disease, particularly dysentery. In this connection it is of interest to mention that no deaths occurred among the marines, although for two months there were nearly 1,500 men on the isthmus.

At Obispo the river furnished a liberal supply of muddy water. By qualitative tests it contained an excessive amount of sodium chlorid, calcium and organic matter, probably vegetable, although the drainage from the native shacks along its banks and the river's general use for washing and bathing were sufficient cause for its contamination. The water from the stream at Empire above the pumping station did not indicate contamination by qualitative tests. Samples from several small streams in the vicinity also did not show contamination except lime and vegetable matter. The lake at Culebra during the dry season had considerable chlorid and organic contamination, probably vegetable.

From Obispo to Colon the Chagres river is available as a source of supply. The sample examined did not show contamination. It was not a sparkling water, had a peaty taste, and contained considerable sediment of vegetable residue. Following the river to its head waters near San Juan it was seen how innumerable were the small streams that flowed into it and it could be more readily understood that after a heavy tropical rain this river might become a swollen torrent difficult of control. Along the banks the native villages depend on its supply. Some of the natives have curious superstitions regarding this river water, which they say causes fever and death. Usually the natives trace the beginning of every ailment to bathing.

Another river not far from Panama and available for supply is the Juan Dias. Here we found a sluggish stream, dark and stagnant. Its waters showed only vegetable contamination.

Nearer Panama is the Rio Grande, which crosses the old Spanish road and during the dry season seems hardly more than a swiftly flowing brook. Its waters are clear and sparkling, containing many small trout. Qualitative analysis indicated this water to be the purest of all the samples submitted for examination by the engineer in charge of the canal.

In the interior the villages are usually situated close to one of the many streams. During the dry season the majority of these dry up, and even the mighty Chagres shrinks to a small rivulet flowing through its broad, stony bed. At such times the water is carried a long distance and left inside the shacks for many days. At a certain village where we arrived one night, tired and thirsty after a long ride, we were only too glad to buy a can of such water, and, after boiling, drank of it freely. In the daylight we saw that it was not unlike pea soup in color and consistency. Some of our officers who were in an expedition to Yavisa and Real, far in the mountains, said there were many streams and brooks with pure, cold and sparkling water in that vicinity. During the dry season the tendency of all these Panamanian rivers to vegetable contamination is to be expected when we find the small streams shut in by dense overgrowth, constantly shedding leaves and twigs into the water beneath. For all purposes of water supply in the canal zone it would appear that the Chagres river is the most suitable, but this question must be sat-

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

isfactorily settled by the chief sanitary officer and the engineer in charge. This problem pertains not only for the canal zone but for the cities of Panama and Colon. The proximity of the Rio Grande to Panama and the excellent quality of its waters suggested, if the quantity was sufficient, its use for a local supply. During the height of the dry season its rate of flow calculated into gallons was said by the engineer in charge to be more than enough for all purposes.

The disposal of sewage and garbage and their relation to the water supply will be among the most important questions of the future. The marines depended on field latrines and garbage sinks, but these were considered to be a constant menace. There has never been a sewerage system on the isthmus in connection with the canal sections. Among the natives primitive methods prevail. Solid and liquid refuse are thrown out on the surface of the ground, where the hogs and the buzzards, self-constituted boards of health, devour it. Adjacent woods and bushes serve as privies for the majority of the natives, but a few have outhouses, the condition of which testified in favor of the primitive methods. The French section houses had been provided with stone vaults and earth closets or had used the barrel system. Their garbage and kitchen waste had been led by brick drains some distance from the kitchens or was deposited on the surface at a convenient spot. In the cities of Colon and Panama we saw the same methods. There were also local flushing systems and drains for modern closets and daily collections of garbage. Usually the native houses have a privy vault at the back of a central court-yard or, if an apartment house, this could be used in common by several families. A sewerage system, not only for Colon and Panama, but for the entire canal zone, will undoubtedly be planned and constructed by those who have charge of the future sanitation.[1]

Having control of the water and food supply of the marines and being able to compel obedience to sanitary regulations, it was not surprising that, by comparison, there was little sickness. The results accomplished show more reasonable hope for the future. The principal diseases were malaria and dengue. As our drinking water was beyond suspicion, we therefore looked for other causes of infection. The two cases of dysentery which occurred in camp probably came from the use of town water. One small epidemic among the natives at Empire was believed to be due to the well water previously mentioned. Isolated cases of dysentery were treated at the clinic of natives. Strange to relate, typhoid fever was not seen and even on investigation in the hospitals at Colon and Panama no cases could be found. An American physician practicing in Colon told me that he never had a case of typhoid to treat since he had been on the isthmus, and this statement was repeated by physicians practicing in Panama.

The relation of the water supply to the frequent presence among the natives of intestinal parasites, especially the *Ankylostoma duodenale*, is more apparent. In view of the careless methods for the disposal of excreta, it is readily seen how ova from an infected case could contaminate the adjacent stream, also how epidemics of dysentery had spread, and how easy it would be for a disease like cholera to sweep over the isthmus, as it did in the early fifties.

1. Since this paper was written I have been informed that the city of Panama is being supplied with water led by pipes from a lake or reservoir near Culebra. A standpipe at Ancon is to be built. A sewerage system has also begun at Panama.

There was no other disease treated which could be directly traced to the water supply, but indirectly the present system of allowing the natives to collect water in open receptacles about their dwellings causes disease by acting as breeding places for mosquitoes which transmit malaria, filariasis or yellow fever. By noting the location of each case of malaria among the marines, it was demonstrated in both regiments that the greatest number occurred in the company houses nearest to the native dwellings, on the outskirts of the camp. A noticeable decrease in cases was observed when the natives were forced to vacate their dwellings. The supposed immunity of the native from malaria is probably due to repeated attacks in childhood. From among the children treated, examination of the blood revealed the parasite constantly in those varying from 6 weeks of age to 15 years. Such children are a constant menace to the community. The cause of the so-called "banana-belly" in native children was found to be either an enlarged spleen from malaria or due to the *Ascaris lumbricoides*.

Many patients who came to be treated for dysentery were found to have ova of the *Ankylostoma duodenale* in their dejecta. The Indians and the Colombians, both young and old, are the greatest sufferers. When diarrhea was not complained of and the blood was being examined for a supposed malarial infection, the diagnosis of hook-worm disease was frequently made by the eosinophilia and hemoglobinemia.

Filariasis was not common. One case of recurrent lymphangitis failed to reveal filaria in the blood taken after 8 p. m., but there was decided elephantiasis of the affected leg. Three other cases of elephantiasis were seen.

It has been definitely proved that the transmission of malaria is through the agency of the anopheles mosquito and not due to drinking water or miasmatic influences. Additional proof of this was given among marines who, while using distilled water, continued to be infected with malaria. Our ignorance of the isthmian fevers caused us from the first carefully to study and tabulate each case in order to differentiate and throw some light on this so-called Chagres fever. Malaria was recognized by the parasites in the blood. The presence of another fever with symptoms resembling malaria, but without parasites in the blood, was suspected. This was dismissed on differential diagnosis. It was believed that they were cases of malaria without the parasite being found. At the beginning of the rainy season such cases became frequent, and it was soon evident that we had a dengue epidemic.

It is important to emphasize the difficulty of diagnosis between malaria and dengue. It is also believed some dengue cases would be difficult to differentiate from yellow fever. Examination of stained specimens of the blood proved to be the surest method for differential diagnosis between malaria and dengue. There were a few cases necessitating a long search or repeated examinations. Quinin was not given until the parasite was found. There is no question of it being the safest antipyretic for use in the tropics if blood examinations can not be made. In dengue it was found apparently to have no effect on the typical fever, and in a few cases it evidently increased the symptoms of cerebral congestion.

Many authorities state that examination of fresh specimens of blood are most reliable. Stephens and Christopher insist on stained specimens, and the con-

clusion we reached agreed with them. Fresh specimens proved to be misleading, for it was found that in the blood of these dengue cases there were irregularly shaped, brownish-yellow, intracorpuscular forms, often seen in shrunken brassy corpuscles, appearing not unlike estivo-malaria parasites. Some of these resembled the *Piroplasma bigeminum*, and may be the blood parasite described by Graham of Beyreuth. They also resemble artifacts which occur in normal blood as it dries. Their presence in the fresh specimens was thought by us to be due to necrobiotic changes in the corpuscle, possibly from a toxin in the blood. We reached this conclusion when in 45 cases of dengue the blood counts indicated no destruction of the corpuscles. In fact, there was more often a polycythemia. Moreover, these piroplasma forms did not appear in the stained specimens. Finally, by feeding experiments with several species of virgin mosquitoes and after varying intervals of time examining the stomach and salivary glands, these piroplasma forms were not found. We also conducted several inoculation experiments by virgin mosquitoes fed on dengue cases at various stages of the disease. The details of these experiments, tables of blood counts and urine examinations, have already appeared in THE JOURNAL A. M. A., Jan. 21, 1905.

During epidemics, when there are many blood specimens to examine, the stained preparations are easier to make than fresh specimens. The technic used was simple: A damp rag to cleanse the ear, a quick needle jab, a large drop of blood on the edge of a cigarette paper, and this applied to one end of a clean glass slide, where it spreads out by capillary attraction, after which it is slowly drawn the length of the slide. After the film is dried, 10 or 15 drops of Wright's stain are added, remaining 20 to 30 seconds. An equal amount of water is then added and the specimen stained 3 minutes. The slide is then washed and dried. It can be examined at once or put aside until convenient. Such a smear contains 5 to 10 times the number of corpuscles in a fresh preparation and is therefore equal to that many specimens. It is moreover available for a differential count of the leucocytes. The distinctive staining of the malaria parasite at once arrests the eye and there can be no danger of confusion if we keep in mind for young forms, first, the red chromatin nucleus; second, the vacuole, and, third, the blue protoplasm. Everything else must be excluded. Adult segmenting forms, rosettes, and presegmenting forms cause no trouble.

During the first rise of fever in dengue the blood fairly spurts from the pricked ear, but during the second rise and convalescence it flows sluggishly, coagulates quickly, and is dark and thick. The series of cases selected for blood count indicate that dengue is one of the few fevers with leucopenia. During the course of the disease the differential count of the white corpuscles shows a gradual decrease of the polymorphonuclear neutrophiles and a corresponding increase of the small mononuclear lymphocytes. This by contrast with malaria in which there is no leucopenia and generally a large mononuclear lymphocytosis, furnished us a valuable aid in diagnosis when the malaria parasite was not found. It takes but little more time when examining a specimen to record its differential count and estimate the number of leucocytes. To recapitulate: Evidence of leucopenia, a normal differential count, and no malarial parasites are in favor of the first rise of fever in dengue. If a malarial blood in which no parasites can be found there will be no leucopenia and the differential count will probably show a lymphocytosis of the large mononuclear and transitional lymphocytes. If there is leucopenia and a decided lymphocytosis of the small mononuclear lymphocytes it points to the second rise of fever in dengue or convalescence.

We investigated other causes of our dengue fever. This disease did not prevail as an epidemic on the isthmus except at our camp. We noted that a number of cases had catarrhal symptoms of the respiratory tract. The increase of dengue at the beginning of the rainy season and a decided fluctuation in the number of cases coincident with dry or rainy days pointed to a direct relation. Our explanation of this was that on rainy days all doors and windows were closed and the houses being overcrowded became poorly ventilated. This would tend to lower the resistance of the mucous membrane of the respiratory tract and favor infection by virulent bacteria. Working on this hypothesis measures to relieve overcrowding were recommended and immediately improvement was observed. Our conclusions were, therefore, that this epidemic was due to a contagious, congestive fever with catarrhal symptoms of the gastro-intestinal and respiratory tract. It resembled influenza in the selective influence of the toxin on the nervous system, in the leucopenia of the blood and also we believe by the possibility of contagion through the respiratory tract. The enlargement of the cervical and inguinal glands in many cases, suggested invasion of the body through the lymphatics. The leucopenia and increasing lymphocytosis might be explained by such infection.

Some of the cases of malaria were of unusual interest. One man had eight attacks of quotidian fever, constantly showing numerous small estivo rings (1/7 diameter corpuscles). He then had a typical attack of dengue with a characteristic chart and not a parasite to be found in the blood. Next he had an attack of fever with a tertian chart and typical tertian parasites in the blood, evidently a superimposed malarial infection, and finally another attack of quotidian fever with the reappearance of the tiny estivo rings. Many of the malarial cases had attacks of dengue and during such attacks the malarial parasite could not be found in the blood. Several cases of malaria were evidently pure infections by the subtertian estivo parasite and the charts were typical of that type of malarial fever. Single and double tertian infections were the predominating malarial fevers with almost the same number of estivo infections. Crescents were rarely seen in these latter cases. No quartan malaria occurred.

The majority of dengue charts are characteristic of that disease, consisting of a fall by lysis in from three to five days from the initial rise and then a secondary rise. A few of the cases would only have the secondary fever on admission. There were two cases, classed with the dengue cases, which had irregular fever charts and considerable albumin (0.125 to 0.5 per cent.). These might have been called yellow fever in the presence of an epidemic.

In concluding this paper the following analysis of symptoms as they occurred in the dengue cases may be of help to us as sanitarians. The eruption, when present, varied from a faint erythema to a profuse measles-like rash. It would often appear with the primary fever. A few cases had an urticarial or purpuric rash and suggested the dengue eruption to be a disturbance of the vasomotor nerves. The eruption was absent or not discovered in many cases otherwise typical. Desquamation was only observed in two cases. A marked congestion

of the eyes and face was usual, but also observed in some of the malarial cases, especially in first attacks. Severe neuralgic pains in head, back and limbs, complained of so bitterly by the dengue patients, were described by patients with malaria, but those who had had both diseases said that the dengue pains were more intense and different in character. A peculiar pain on moving the eyeballs, especially when looking up, with tenderness to pressure, is almost diagnostic, yet a few cases of malaria had this symptom. The onset of fever was usually sudden, but in malaria more gradual. Diarrhea and gastrointestinal irritation were particularly noticeable at the beginning of the epidemic of dengue. A few complained of chills, but the majority had merely chilly sensations. Definite chills were common in malaria. Anorexia and vomiting occurred in both diseases. In one case of typical dengue there was fresh blood in the vomitus. Bleeding gums were noted in many. The scleræ looked muddy and in an insufficient light might be easily called icteric. In a few of the cases of malaria there was decided icteric scleræ and jaundiced skin. Such cases were carefully watched in the view of the constant expectation of yellow fever.

Pains in the joints, especially the knees, were occasionally noted, but there was no evidence of swelling. Pain in the epigastrium was commonly complained of in dengue, and over the spleen and liver by those who had malaria. Parasthesias, loss of sensation and numbness of the extremities, increased or diminished patellar reflexes, neuralgic pains in the shoulders, back of neck and chest, muscular cramp, substernal oppression with a sense of suffocation, tachycardia, and even a feeling of impending death were some of the nervous manifestations. Insomnia was common and restless sleep with horrible dreams, mental uneasiness, vertigo, photophobia and frontal headache indicated a decided cerebral irritation. Indefinite neuralgias and loss of power in the legs were seen in few cases and had to be differentiated from beriberi, which exists on the isthmus.

The pulse usually followed the fever, but in the more severe cases during the second rise of fever it was slow to respond. In one case there was an actual divergence of pulse and temperature, an important symptom of yellow fever. At first the pulse was full and strong, often dicrotic, later it became soft and weak. Profuse sweats were common in both malaria and dengue. During the first rise of fever in dengue the skin had a peculiar dry, congested feeling. Herpes of the lips, eyelids, and neck were noted. The tongue was usually dry, with a brownish white coat at the base and a clean tip and sides. In malaria it was swollen and white. The spleen in some, but not all cases of malaria was tender and palpable. This symptom was present in dengue cases who had had malaria. Epistaxis was noted in three cases. In a few of the dengue cases who had diarrhea, blood, pus, and mucus were found in the feces and caused anxiety as to the possibility of dysentery. This condition quickly disappeared.

Among all the 279 cases of fever which were tabulated and analyzed there is, of course, a possibility of there being mild yellow fever. The two cases mentioned as having atypical dengue charts with excessive albumin, one of which presenting a diverging pulse and temperature curve, were decidedly suspicious. It is believed, however, that all were due to either malarial infection or dengue. The chief sanitary officer of the canal, Dr. Gorgas, who kindly examined the data and charts of these cases, did not think that we had had yellow fever.

In closing, I wish to express my indebtedness in collection of data and assistance in blood examinations to Assistant-Surgeon Richard L. Sutton, U. S. Navy, who was associated with me at Empire.

DISCUSSION.

DR. DENSLOW LEWIS, Chicago, said that the first and most important subject that has to be considered in this connection is the sanitation of the Isthmus, and that we are fortunate in having on the ground so competent a medical officer as Dr. Gorgas.

DR. CARPENTER said that we can feel that the future is safe in the hands of Dr. Gorgas. He has been very energetic recently, but Dr. Carpenter understands at present that yellow fever is now generalized on the Isthmus. Quite a number of non-immunes were sent down a little before the country was prepared for them, and in consequence there seems to have been a generalized infection. He thinks that the success of the sanitary authorities rested on the fact that they were able to enforce obedience to sanitary regulations among men under military control, and it seems to him that if in the future the Isthmus is placed in a sanitary condition, the engineers and employes living under proper conditions could get along very well. The same means for destruction of stegomyia mosquito larvæ will do away with malaria also. Dr. Carpenter thinks this is of great importance, and Dr. Gorgas, he believes, recognizes the menace, so far as malaria is concerned, from the antives. The natives in the vicinity of the camp were forced to move from their houses. This cause was very evident; plans were drawn of every company house and the cases were tabulated and in this way it was found where the greater number of cases were occurring. Everything at first was in the dark. The native physicians gave no light. Of the so-called Chagres fever little was known. Dr. Carpenter thinks that malaria when it is recognized early and is properly treated, is not particularly dangerous. The Marine-Hospital surgeons had no fatal illness among their patients. There were the benign, the tertian and the pernicious infection. Dr. Carpenter was also particularly interested in being able to differentiate in a few cases between the quotidian estivo-autumnal and the subtertian estivo-malaria. The Italians differentiate between these, but he does not think Americans have generally accepted this classification. In reply to a question, Dr. Carpenter said that he did not know how the sewage is being disposed of. He has not been in communication with the physicians on the Isthmus. He heard that they have started to dig up the streets to put in a sewer system for the city.

THE NASAL SEPTUM; A DESCRIPTION OF THE AUTHOR'S PRESENT MANNER OF PERFORMING THE WINDOW-RESECTION FOR DEFLECTIONS.*

OTTO T. FREER, M.D.,
CHICAGO.

TYPES OF DEFLECTION.

The mucous membrane incisions in my method of performing the submucous or window resection vary with the type of deflection and for this reason I precede the details of the operation with a description of deflections as I have seen them, employing for them as much as possible the names in common use and grouping them according to their form.

Angular Deflections.—The double-angled deflection: This variety of deviation I have found by far the commonest. It possesses a vertical and horizontal angle, joining near the base of the septum and forming a projection on the convex side not unlike the corner of a box. The vertical angle (Fig. 1) occupies the quad-

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

rangular cartilage and ascends to a varying degree, sometimes into the perpendicular plate of the ethmoid bone. The vertical angle may jut out so strongly that it presses into the inferior turbinated body. The horizontal angle in the usual type of double-angled deflection begins in the cartilage in front of the vertical one and extends backward and upward in the form of a wedge into the bony septum, its apex following the superior border of the vomer in most cases, the crista nasalis inferior and vomer curving outwards above the nasal floor to make the lower plane of the horizontal wedge. (Fig. 2.*b*.)

On the concave side of the deflection a deep trough with a V-shaped bottom is seen ascending backward and slightly upward and corresponding to the projection of the horizontal angle on the convex side. The site of the vertical angle is usually merely indicated by a gentle depression easily overlooked.

The Crestlike Angular Deflections with a Single Angle.—This variety of deflection I have found next in frequency to the double-angled kind and it is distinguished from the latter by the absence of a vertical angle, the horizontal one alone existing. (Fig. 3). It is this type of deflection that is so commonly designated a "ledge, crest, exostosis or spur" under the supposition that it is entirely or mainly a solid projection with

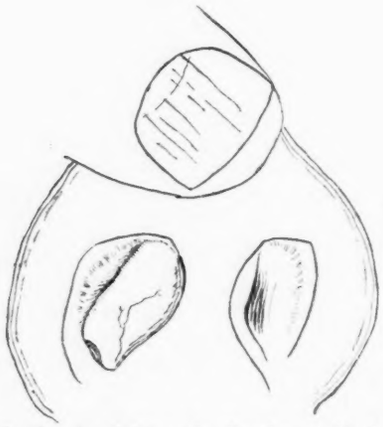

Fig. 1. Deflection in right naris showing vertical angle. From life.

little or no concavity to correspond to it on the other side of the septum. The skeletonizing of the deflected septum incident to the window resection soon showed me the rarity of massive prominences arising from a plane septum and I found that the supposed ledges or crests which I used to saw away were really merely the summits of evenly hollowed deflections in cartilage and bone.

The posterior part of the horizontal angle of deflection may often be seen by posterior rhinoscopy as shown in Fig. 4*a*.

Sigmoid Deflections.—This type, in my experience, is third in frequency, being comparatively rare. The septum may be S-shaped horizontally or vertically. In the horizontal variety the anterior part of the deflection presents a vertical angle or bend like that found in the double-angled deflections, but the posterior, hidden plane of this vertical angle is unusually long so that it crosses the median line and creates behind the first bend a second vertical angle of deflection, usually partly or wholly in the bony septum, and with its convexity in the other naris.

In vertical S-shaped deflections two bends exist with their concavities reversed and situated, one above the other, the lower one having the usual form of the crest-shaped horizontal angle, while the upper one is commonly more gently curved and extends high up into the perpendicular plate.

Bowed or C-Shaped Deflections.—I have met with very few of these. They are usually extreme, situated far in front and obliterate the naris by an even bulging of the cartilaginous septum against the outer nasal wall. Posteriorly, however, they merge into the standard type of the crest-shaped horizontal angle.

The bulging cartilage bellies out both vertically and horizontally in the form of a capital C.

Columnar Cartilage.—The dislocation of the anterior inferior border of the quadrangular cartilage (so-called columnar cartilage) from its normal seat above the cutaneous septum is in my experience a frequent complication of all kinds of anterior deflections. Normally the free border of the cartilaginous septum extends in the median line upward and forward above the cutaneous septum from the inferior nasal spine to the space between the median plates of the alar cartilages. In the anomaly mentioned the inferior and anterior angles of the cartilage of the septum are dislocated from their positions above the crista incisiva and between the alar cartilages so that the lower anterior movable part of the

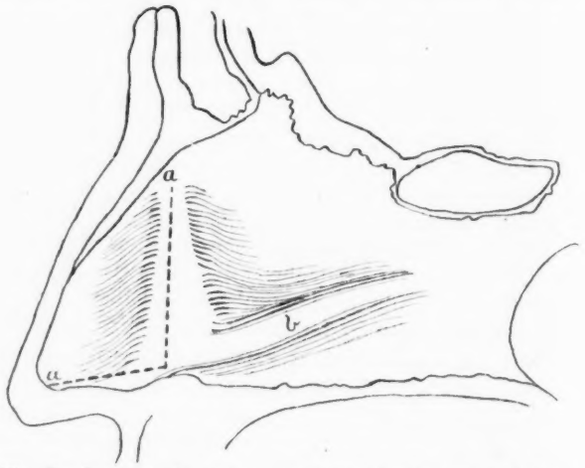

Fig. 2.—Lateral view of convexity of double-angled deflection; *aa*, outline of mucous-membrane incision; *b*, horizontal angle of deflection.

cartilaginous septum is displaced from its place above the cutaneous septum into one or the other nostril. In addition, when it is thus freed from its sustaining points, it usually grows downward and forward unrestrained, curling on itself, often creating a decided obstacle in the nostril of the concavity of the deflection it complicates, and appearing as a white elastic object under the skin beside the septum cutaneum. (Fig. 5*a*.)

Irregular Deflections.—Some deflections are of such an odd shape that they can not be classified, but the great majority of those I have seen fit into one of the above groups.

Bony Deviations.—Deflections confined to the bony septum are fairly frequent. They are apt to be taken for solid crests or spurs, their projecting portion being sawed away, while the greater part remains behind and continues to obstruct the naris. The window resection extirpates these obstacles radically.

DESCRIPTION OF THE OPERATION.

Preparations.—The operation is to be done, as far as possible, according to the rules of aseptic surgery, a knowledge of which is presupposed. A special operat-

ing room is not required, and the resection may be performed in the physician's office.

It is necessary to clip away all of the hairs in the nasal vestibule. They retain dirt, catch the light and even a few of them surprisingly obstruct the view.

Position of the Patient.—Preparations should be made for conducting the operation with the patient either in the sitting or recumbent postures, for both positions have their advantages and it may be needful to change the patient from one to the other while the work progresses. For the operation with the patient reclining I employ a high operating table, one end of

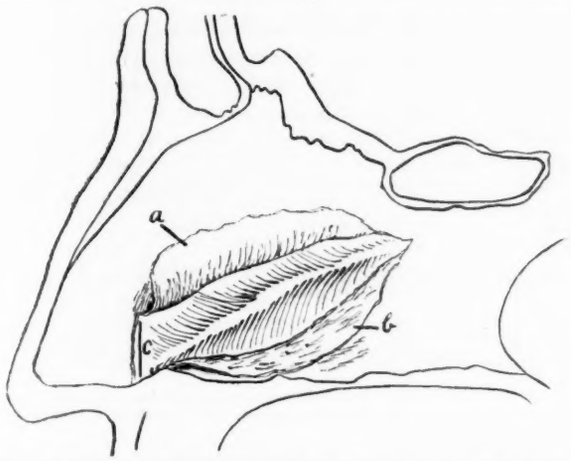

Fig. 3. Lateral view of convexity of crest-shaped deflection beginning well in front; *a*, superior flap; *b*, mucous-membrane pouch formed below; *c*, first cut through cartilage in front of deflection.

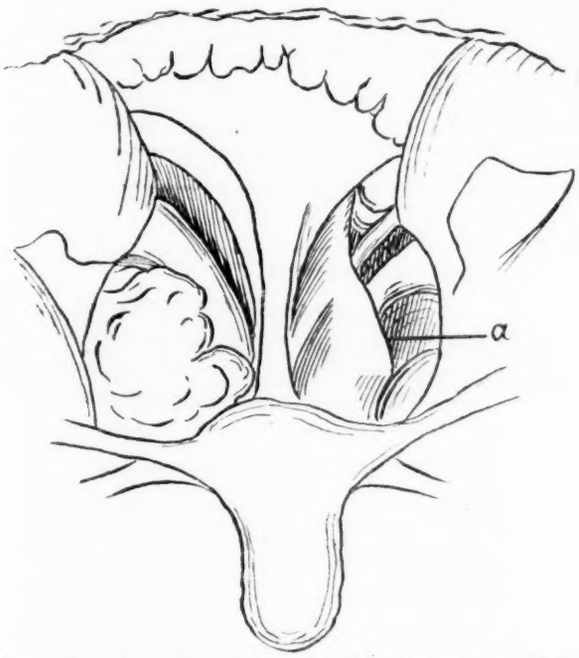

Fig. 4. Posterior view of a bony deflection. From life; *a*, deflection.

which may be raised in order to lift the patient's head to the required level.

Where the recumbent position is employed, the patient avoids the spells of faintness that are apt to attack him if he sits during the operation. Neither he nor the surgeon are fatigued by long-continued sitting in a strained position. What little blood escapes the swabs flows backward into the nasopharynx and is swallowed, leaving the operative field clear. The higher parts of the septum are more easily reached than when the patient sits up, and the assistant who wipes away the blood has a better view of the field.

The advantages of the sitting position for the patient are these: The resection of bony deflections is usually easier than when he lies down, especially where the crista nasalis inferior (synonyms: superior maxillary crest, crista incisiva) and the lower part of the vomer need cutting or chiseling away, for while the upper parts of the septum are most readily reached when the patient is recumbent the parts nearer the nasal floor are most accessible when his head is held upright. The tampon can also be more accurately built up in the

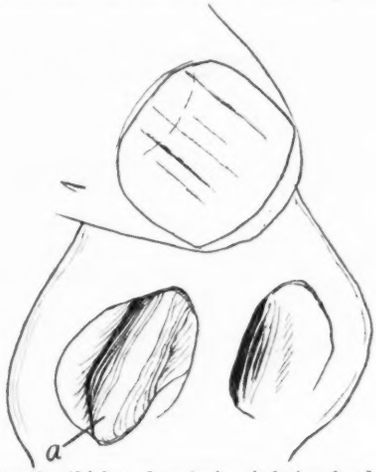

Fig. 5. Greatly thickened anterior inferior border of the cartilage of the septum lying beside septum cutaneum; *a*, cartilage. From life.

latter position. In most cases I begin the operation with the patient lying down and have him sit up at the end to finish the bony resection and insert the tampon. The

Fig. 6. Kirstein's electric headlamp.

tendency to faint seldom lasts beyond the cartilaginous resection.

Lights Employed.—The Kirstein electric headlamp (Fig. 6) is, in my experience, the one best suited for the operation. In the usual types of electric headlamps the rays are directly emitted from a light on the forehead, so that the light beams form an angle with the axis of the observer's eyeball, and if a cavity be inspected it is not lighted deeper than the apex of this angle, and for this reason, no matter how brilliant be such a light, it

only illuminates the anterior parts of the nasal fossa, leaving its deeper parts in darkness. In the Kirstein light, called by its inventor *das leuchtende Auge* (the shining eye), the light is condensed from above on a small mirror fitted with a central perforation through which the observer looks and which gives him the advantage offered by the common head mirror, namely, that the rays returning to the eye from the illuminated object are parallel to those emitted by the light, and hence the cavity inspected is lighted clear to its bottom. The advantage of the Kirstein light over the head mirror is independence from a source of light for reflection, for this light dazzles the observer and compels him to hold his head in a fixed position relative to

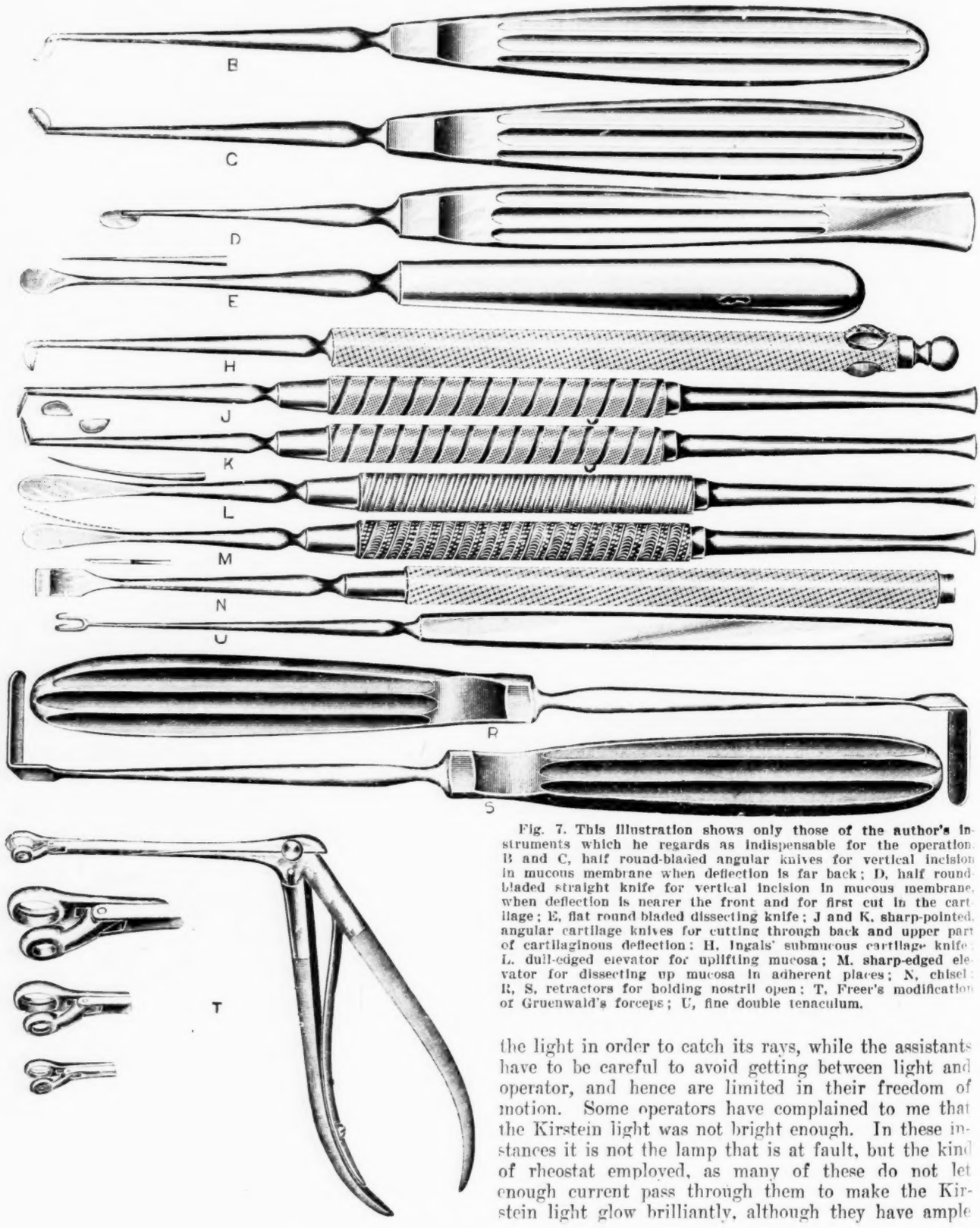

Fig. 7. This illustration shows only those of the author's instruments which he regards as indispensable for the operation. B and C, half round-bladed angular knives for vertical incision in mucous membrane when deflection is far back; D, half round-bladed straight knife for vertical incision in mucous membrane, when deflection is nearer the front and for first cut in the cartilage; E, flat round bladed dissecting knife; J and K, sharp-pointed, angular cartilage knives for cutting through back and upper part of cartilaginous deflection; H, Ingals' submucous cartilage knife; L, dull-edged elevator for uplifting mucosa; M, sharp-edged elevator for dissecting up mucosa in adherent places; N, chisel; R, S, retractors for holding nostril open; T, Freer's modification of Gruenwald's forceps; U, fine double tenaculum.

the light in order to catch its rays, while the assistants have to be careful to avoid getting between light and operator, and hence are limited in their freedom of motion. Some operators have complained to me that the Kirstein light was not bright enough. In these instances it is not the lamp that is at fault, but the kind of rheostat employed, as many of these do not let enough current pass through them to make the Kirstein light glow brilliantly, although they have ample

capacity for the little diagnostic lamps in common use. The regular German Kirstein miniature lamps require from 10 to 12 volts and often an ampere of current to make them blaze with a white light. The O. C. rheostat with a 50 candle power light in series or a small 12-volt storage battery fitted with a rheostat will furnish the required current. Of late I have used 6-volt American miniature lamps in my Kirstein sockets and have obtained as bright a light as with the larger German ones.

Those who prefer the head mirror can use it when the patient lies down if a 50 candle power, stereopticon, pigtail filament, 110-volt, Edison incandescent lamp be used as a light to reflect from. It may be clamped for this purpose to an *x*-ray stand placed beside the patient.

Anesthesia.—In the exceptional cases where the dislocation of the anterior inferior unattached border of the cartilage of the septum from its seat above the cutaneous septum demands the beginning of the resection from a cut along this free border, a 2 per cent. solution of cocain is injected submucously on each side of it, for the thick epithelium over the foremost, lowest part of the septum hinders absorption from the surface. In all other cases, as formerly, I first swab adrenalin, 1 to 1,000, on both sides of the septum to the limits of the

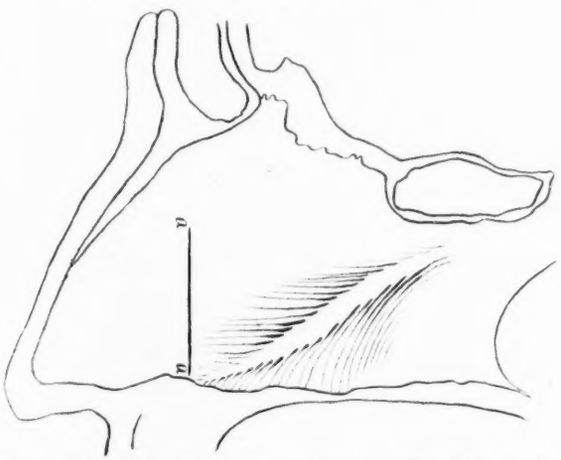

Fig. 8. Lateral view of a crest-shaped deflection beginning deeper in the naris; *aa*, vertical mucous-membrane incision made in front of deflection.

deflection, following it in about three minutes with pure cocain in flakes or powder, rubbed on the same regions with a minute, moist swab. The concentration of the drug produces profound local insensibility, which is confined to the operative field and is so rapid that the first cut may be made in about five minutes after the application. I have never seen noteworthy cocain intoxication, though, as the operation proceeds, the pure drug is repeatedly applied to the wound surfaces to maintain the anesthesia and as a hemostatic. The insensibility to pain obtained with pure cocain is so perfect that observers of my operations have been struck by it and have contrasted it favorably with the local anesthesia produced by the usual solutions. I can see no reason for submucous injections of the drug except in the locality mentioned.

For children I combine chloroform narcosis with the application of cocain. Just enough chloroform is used to keep the child unconscious of its surroundings. As a rule, hardly a half narcosis is needed.

Assistance.—An attendant is needed to hold the nostril open with retractors, and it is well to have a second one keep the field of operation dry by swabbing, as this makes the operation much more rapid and precise. At least 60 swabs rolled on pointed applicators should be ready.

Specula.—No speculum is used during the operation, the naris being held open by an attendant with the flat retractors shown in Fig. 7 (R. S.), one being broad and the other narrow. They can be adjusted much more accurately than a speculum to suit the varying needs of the progress of the operation.

Incisions in the Mucous Membrane.—These vary according to the type of the deflection. For the frequent double-angled deflections described, my present incision is made in the shape of a capital L looking backward, the vertical cut, as of old, following the angle of the vertical deflection and beginning high up on the septum above the deviation, the horizontal cut extending forward from the bottom of the vertical one along the crest of the horizontal deflection, if it be acute and project greatly. If it be little pronounced, the incision is made along the nasal floor. The cut should extend to the very front of the septum in most cases (Fig. 2). This outlines an anterior flap with its base forward. The posterior extension of the horizontal cut, which gave the older incisions the form of an inverted T, I no longer use. The reason for usually making the hori-

Fig. 9. Deflection showing vertical angle in left naris and dislocation of free border of cartilage into naris of concavity. Dotted lines show sites of mucous-membrane incisions.

zontal cut along the crest of acute-angled horizontal deflections and not along their base is the frequently great adherence of the mucosa at the apex of such horizontal deflections and below it, so that its separation from below is difficult, and it is better to dissect it off downward from an incision made along the crest.

The incision for the crestlike deflections varies with their depth in the naris. For those extending to the front of the nostril an incision is made from behind forward along the whole length of the crest of the deflection, curving the cut upward at the front. This outlines a superior instead of an anterior flap (Fig. 3).

Most of the crestlike deflections, in my experience, begin far back in the naris in or near the bony septum, and for these a single vertical incision (Fig. 8, aa), reaching from the nasal floor high up on the septum, is made just in front of the beginning of the deflection and the resection is conducted for this, for in this type of deviation there is no deflection to remove from the front of the naris, and the vertical incision opens the way at once to the deep-seated deviation in the bone.

The mucous membrane cuts are made with the knives with half-rounded edged or round edged blades (Fig. 7, B, C, D, E), B and C being used for vertical angles

occurring far back. The surgeon must be sure to make his cut deep enough to sever the perichondrium, so that it can be elevated from the subjacent cartilage, for while the perichondrium usually peels very readily from the cartilage it is only possible to separate the mucosa from the perichondrium by tedious dissection.

Where the anterior inferior free border of the septum is displaced into the naris of the concavity sufficiently to obstruct breathing, causing the anterior plane of the vertical angle of deflection to lie across both nostrils (Fig. 9), the resection is commenced by an incision on the free border of the septum on the concave side, and as much of the deflection is dissected out from this as can be reached. If the deviation extend far back into the bone the usual vertical cut is made along the vertical angle on the side of the convexity and the dissection continued from this.

The horizontally sigmoid deflections require no special incision, and I extirpate them from the usual reversed L cut mentioned for double-angled deviations, the second, deep-seated bend being readily reached from this. The same cut also answers for the C-shaped deflections, the vertical incision being made along the most bulging part of the bend. The upper bend in the vertically sigmoid deflections can readily be reached from the incisions described for the crest-shaped or double-angled deflections.

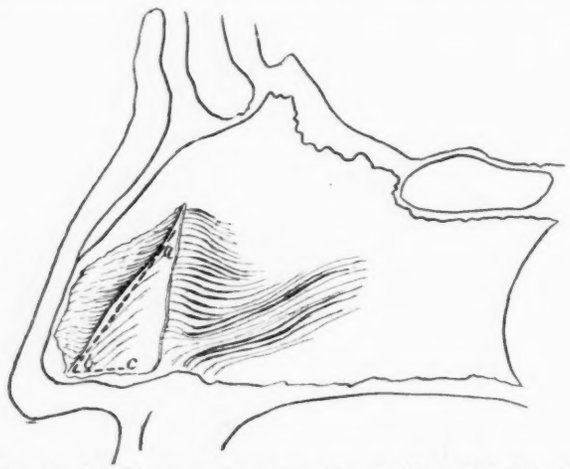

Fig. 10. Lateral view of septum with double-angled deflection, anterior flap reflected; *abc*, first cut through cartilage.

The Reason for the Incisions Described.—The great majority of deflections have a vertical angle or summit, and the principle of my method in these cases is to begin the separation of the mucosa perichondrium from a cut following this summit. In distinction to this the German operators and their many pupils in America make the first mucous membrane incision in front of the beginning of all deflections, sometimes, as Hajek and Menzel do, at the very front of the septum, on the free border of the cartilage, starting the resection from this foremost part, no matter how far behind it the deflection may commence.

The first part of the separation of the mucosa of the convexity is made easier by the German type of incision, and the single slitlike wound left after the resection is completed closes itself, while my flaps have to be applied and held in place with the tampon. The disadvantage of the German cut, however, is that one has to operate through a button-hole incision far in front and that even the remotest parts of the deviation have to be reached through this contracted orifice at the greatest distance from them on the septum. It is also admitted by advocates of this method that they find it difficult to elevate the mucosa-perichondrium over and behind the vertical angle of deflection and that a perforation of the mucosa of the convexity is apt to occur in this locality. In short, one has the difficulty of conducting the resection in a long pouch of mucous membrane extending back from the very front of the septum and entered from a button-hole incision. This suffices very well for many of the purely cartilaginous deflections, but in the majority of cases there is a bony deviation to resect, extending frequently nearly to the posterior border of the vomer, and until the cartilaginous deviation is cleared away it is often impossible to tell how much bone will need removal. To judge from my own experience with the difficulty of resecting the bony deflection from the button-hole incision, those who use this method must often slight the bony part of the operation. In fact, one gains the impression from their writings that the main thing is to resect the cartilage and that bony deflections are an unimportant complication, whereas in my experience I have often had to cut away as much bone as cartilage to free the nostril.

In distinction to the German methods my vertical incision leaves but a short, widely open sac of mucous membrane behind the vertical angle, and the latter does not have to be passed in elevating the mucosa of the convexity behind it, as its liberation begins on the apex of the angle. In addition the bony part of the deflection is made perfectly accessible and is exposed to view.

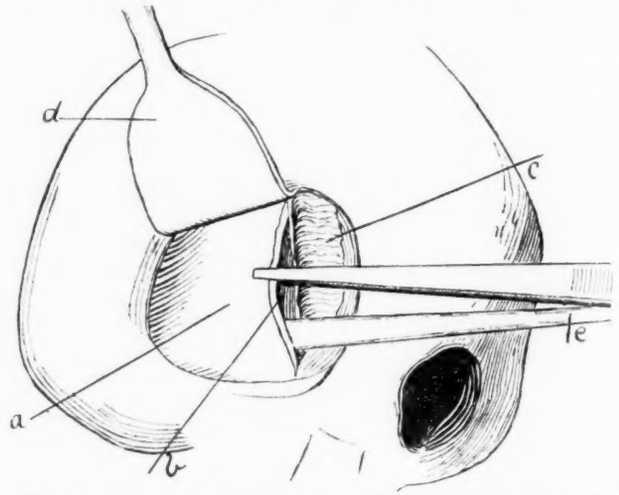

Fig. 11. Denuded deflection in the right naris seen somewhat from the side. The posterior edge of the slit in the cartilage is held with the rat toothed forceps after it has been lifted up with the elevator: *a*, cartilaginous deflection; *b*, inner surface of the mucosa of the concavity; *c*, anterior flap; *d*, retractor lifting wing of nose; *e*, elevator underneath the cartilage.

In order to overcome the difficulties of the anterior incision, Killian complicates the operation by holding the mucous membrane sac open with the blades of his long speculum for rhinoscopia media. An instrument of this kind takes up too much room in the nasal fossa, blocks the nostril and interferes especially with the free use of forceps for cutting away bone.

Another objection to the mucous membrane incision far in front is the fact that it coincides with the first cut through the cartilage, so that, should the mucosa of the concavity be accidentally pierced in making this cut, a penetrating wound straight through both the coverings of the septum will result, and hence often a permanent perforation of the septum, while my anterior flap in this region overlies an accidental hole through the mucosa of the concavity and closes it. The foremost

part of the septum is the worst place for a perforation, as it crusts for a long time and is evident to the patient.

My incisions for the other varieties of deviations mentioned are also all designed to make the deepest part of the deflection accessible.

Instruments for Separation of Mucous Membrane.—Most of the instruments devised for this part of the work are unnecessarily large and massive, and the heavy bone implements of the general surgeon seem to have served as models for them. The problem is not so much to scrape off the perichondrium and periosteum from the septum as one would denude the tibia as to carefully undermine the coverings of the deflection, for the instruments, on account of the position of the septum between two narrow cavities, must of necessity work nearly parallel to the surface attacked so that scraping is only possible to a limited extent in front. In addition, the soft, yielding, springy cartilage is not as suitable as bone for scraping with chisel-edged instruments. The undermining must be done in narrowest places, around corners and often at a great depth in the naris, by actual measurement in many of my cases two to three inches behind the front of the external nostril. The type of elevator demanded is, therefore, thin-bladed and flat, so that it may undermine readily, narrow so that it may fit small nares, long so that it may

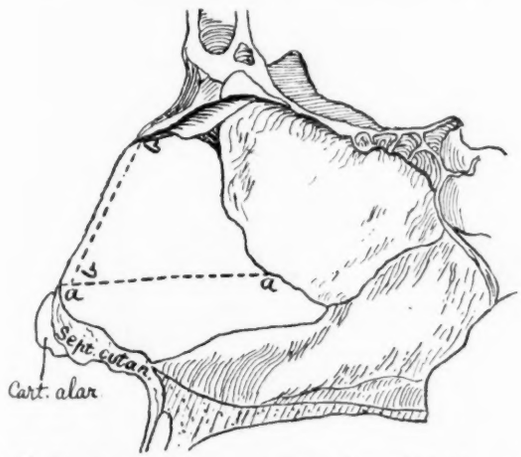

Fig. 12. The nasal septum; *aa*, line below which the cartilage may be completely removed; *bb*, posterior limit of strip of cartilage under nasal bridge to be preserved.

reach places deep in the nasal fossa, and gently curved so that it may work around corners and always keep its edge close to the surface to be denuded, lest it perforate the mucosa. A sharp and dull separator are needed, the dull one being merely without keen edge, but never blunt, as blunt instruments perforate readily by punching through in front of adherent places. The sharp elevator and, in addition, my round-edged knives of various patterns (Fig. 7, L, E, D) are used for keen dissection in places where the covering of the septum is adherent. In many cases all of the separation may be done with the dulled separator, but the crests of deflection, the bottom of the concavity, cicatrices after previous operative attempts, often both sides of the crista incisiva and vomer below the horizontal angle of deflection and the foremost part of the cartilage, are places where the covering may need to be dissected away with keen blades.

In addition to the long elevators mentioned, it is a great convenience to have a short-bladed pair for uplifting the mucosa in the front of the naris, for the closer to its working point that an instrument is held the easier is it to direct its motion and the firmer is its guidance.

A thing to avoid in the construction of instruments for the resection of deflections is the so-called nasal angle. This is an angular attachment of the handle to the shank designed to keep the hand below the level of the nose under the supposition that it gets in the way of sight when holding a straight implement, and a number of instruments for the submucous resection are now made in this manner. Mine are all straight, yet I can always see the field of operation perfectly. Even slight pressure against the distal end of an angular instrument tends to rotate the handle, which, therefore, has to be held firmly either in the fingers or, as is easiest, grasped in the whole hand. This effort implies a stiff wrist and fingers and makes it necessary to make the motions of the instrument with the coarse muscles of the arm and shoulder, instead of the finer ones of the hand and fingers, which are capable of more accurate and controlled work. The presence of an angle also complicates the movements needed and disturbs the sense of direction.

Separation of Mucosa on Convex Side.—The mucous membrane and perichondrium of the septum form two distinct layers. The perichondrium is thin and trans-

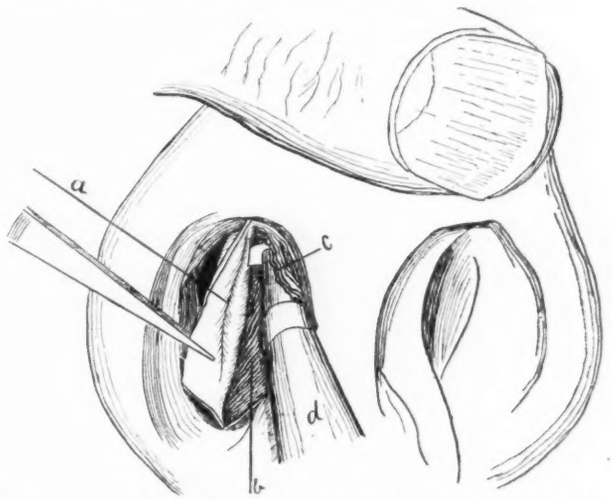

Fig. 13. The cartilaginous deflection, including the vertical angle, *a*, has been cut through at its base and in front and is being severed behind and above by the angular cartilage knives; *b*, inner surface of the mucosa of the concavity of the deflection; *c*, anterior flap folded out of the way; *d*, angular cartilage knife.

parent and is readily overlooked, because the whiteness of the cartilage shines through it. The inexperienced operator, therefore, is apt to attempt to lift the mucosa from the perichondrium, a difficult task even for keen blades, under the impression that he is baring the cartilage, when he is really leaving it still covered with its thin film of perichondrium. Had he passed his dulled separator under the perichondrium, between it and the cartilage, the undermining of the covering of the deflection would have been a simple matter. It is, therefore, necessary to search for the beginning of the thin membrane of perichondrium at the edges of the incisions, gently scraping it up with the dulled separator until the instrument will pass underneath it. Nevertheless, there are often places where the perichondrium or periosteum clings to cartilage or bone, and the sharp dissectors are needed in such regions. In this manner, in double-angled deflections, the anterior flap should be reflected (Fig. 10) a little beyond the limits of the deflection, so that it will fold back and stay out of the way.

The pocket of mucous membrane behind the vertical angle is next made by undermining perichondrium and periosteum over the entire remaining area of deflection backward and, if possible, downward to the base of the septum. Along the crest of and below the horizontal angle of deflection keen dissection with the sharp elevator may be required, and the elevation of the mucosa in this region may be so difficult that it may have to be deferred until the resection of a part of the cartilage makes it more accessible.

In the anterior crestlike deflections an upper flap is made, large enough to fold upward as much out of the way as possible. The separation is then continued below the horizontal crest, a mucous membrane pocket being created which reaches the base of the septum, the crista incisiva and vomer being thus bared below the horizontal angle (Fig. 3). As stated, sharp dissection is often needed in this region.

In deep-seated deflections beginning near the bony septum the separation is conducted from the vertical cut in front of the deviation described (Fig. 8).

In the anterior deflections that require dissection from the free border of the quadrangular cartilage in the naris of the concavity, keen dissection with the round-bladed knife (Fig. 7, E) is sometimes needed for a distance back of about three-fourths of an inch before dull separation becomes possible.

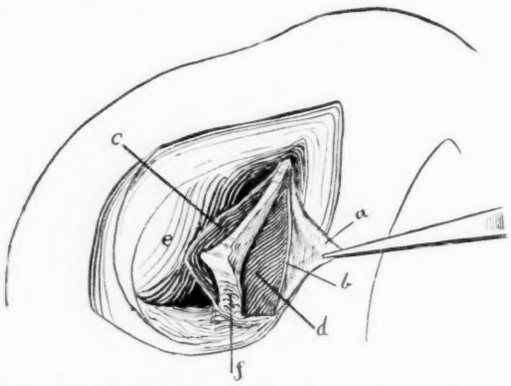

Fig. 14. V-shaped profile of bony deflection seen after removal of cartilaginous deviation; *a*, anterior flap; *b*, anterior cut edge of cartilage; *c*, separated mucosa of convexity of deflection; *d*, inner surface of mucosa of concavity of deflection; *e*, inferior turbinate; *f*, vomer.

First Cut Through the Cartilage.—A clean cut through the cartilage with my thin-bladed, razor-edged knife (Fig. 7, D or E) is less apt to perforate the mucous membrane of the concavity than tedious scratching through with a thicker-edged, sharp instrument, for the thin knife cuts through with slight strokes and is held lightly like a pen in relaxed fingers, while it is necessary to seize the thick-bladed instrument more firmly in order to make the pressure on the septum needed to make it cut, a pressure which is apt to make it suddenly plunge through the mucosa of the concavity when the cartilage is pierced. The light stroke used in cutting with a thin blade permits a delicate sense of touch which tells the operator when he has penetrated the cartilage. I have abandoned the use of the little finger in the other nostril to feel for the edge of the knife under the mucosa, as it presses the mucous membrane against the advancing edge and so favors a perforation. When the knife seems to have severed the cartilage along a line of about one-half an inch, the cut edge is felt for with a dull spatula, lifted up, and seized with delicate rat-toothed forceps (Fig. 11) which pull on it while the penetrating cut is finished with the severed edge of cartilage in plain view as a guide. I always operate with the right hand, no matter in which nostril the deflection lies.

Before making the first cartilaginous incision in the common double-angled deflections the anterior flap is held out of the way with the retractor which holds the nostril open or with a fine double tenaculum. The first cut through the cartilage is then made as formerly, along the entire base of the reflected anterior flap (Fig. 10, *a. b.*) In the region below the level of the anterior angle of the quadrangular cartilage, that is, below the upper boundary of the alæ nasi, the incision may be made at the very front of the cartilage of the septum, if the deflection extend so far in front, above this boundary, where the quadrangular cartilage underlies the lateral cartilage of the external nose (Fig. 12), the incision should leave a distance of at least one-half a centimeter, about a quarter of an inch, between it and the under surface of the nasal bridge in order to insure its support, for Mueller and Menzel claim to have seen slight sinking in of the nasal bridge in this region. I have never myself seen this in any case nor does Killian mention it in his description.

I no longer conduct the whole of the elevation of the mucosa of the concave side through a single anterior incision in the cartilage, but join to my first penetrating cut a short second one (Fig. 10, *b. c.*) along the base

Fig. 15. V-shaped bony deflection seen after resection of the cartilage, pressing firmly into inferior turbinated body; *a*, bony deflection; *b*, inferior turbinate; *c*, mucosa of concavity.

of the septum, cutting through the cartilage from without as in the first cut or else separating a little of the mucosa of the concavity and cutting through the cartilage from underneath after introducing one of the knives under it. This produces an angular cartilaginous flap (Fig. 10, *a b c*), which gives more room for freeing the mucosa of the concavity than the older single cut did, in fact the pulling aside of this cartilaginous flap gives so perfect a view of the mucosa of the concavity and of the separator uplifting it that I no longer find it necessary to watch the motions of the instrument underneath the covering of the septum from the naris of the concavity as I formerly did, nor do I even think this advisable, for one is less certain to avoid a perforation under these conditions than when the blade of the elevator is actually seen as it separates mucosa from cartilage.

When the vertical angle of deflection is situated very far forward and is unusually acute, its anterior plane extending transversely across the nostril or even curving towards the observer, I have found it best to make the first cut in the cartilage along the crest of the vertical angle of deflection, in the same line as the vertical cut in the mucosa, and to elevate the mucous membrane

of the concavity of the deviation by working backward and forward underneath the cartilage from this first cut.

In the crestlike deflections the first incision in the cartilage is made vertically in the plane septum just in front of the beginning of the deflection. (Fig. 3, *c*). This plan is adhered to even when the deflection is wholly of bone, the cartilage being undermined until the bone is reached.

Separation of Mucosa on Concave Side.—The pulling aside of the cartilaginous flap described, gives such a perfect view into the pouch of mucous membrane on the concave side of the deflection, formed by the progressing separation of the mucosa from the cartilage and bone, that this part of the operation can be done much more rapidly than by my former method of working through a slit in the cartilage, and with far less danger of a perforation.

In adherent places the covering may be dissected off with exactness in full view, with the sharp elevator (Fig. 7, L). In most cases the liberation of the mucosa may be done throughout with the dulled elevator, but not infrequently places are encountered where the perichondrium or periosteum are firmly grown onto a cartilage or bone as the result of previous operations or inflammations or where vessels enter osseous substance.

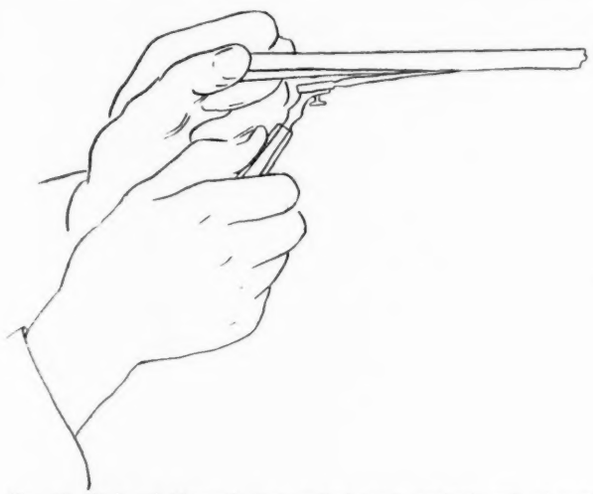

Fig. 16. Strip of bismuth lint pulled taut against end of probe for introduction.

In such places blunt instruments fail to progress and if force be used punch through the mucous covering. In fact the safety from perforation supposed to be offered by thick, blunt instruments is imaginary, for they plunge through more readily than thin ones, as much pressure is needed to undermine with them.

The most difficult separation is usually found in the deepest pit or trough of the concavity and below this on the side of the vomer and crista incisiva and the separation of the periosteum from these regions may have to be deferred until the resection of the cartilage gives freer access.

The separation on the concave side is not complete until the mucous membrane hangs away from the hollow of the deflection and the septum looks straight in the nostril of the concavity.

Resection of the Cartilage.—Before cutting away the cartilage the operator must be sure that it is entirely bared of its coverings on both sides lest a piece of mucosa be torn out with it when it is removed.

I have seen no reason for changing my original method of cutting out the cartilaginous deflection. I regard this as the easiest part of the operation and commonly succeed in removing all but remnants of the deviation in the cartilage in one piece. I have not felt the need of adopting the forked knives of Killian and Ballenger which can not be used on cartilage which is thick throughout or in places, and which do not apply themselves well to abrupt bends.

The bared cartilage is pulled outward with the rat-toothed forceps, while Ingals' cartilage knife (Fig. 7, H) is introduced underneath it to the back of the pouch of mucosa on the concave side of the deflection. Its point is directed toward the convex side and its back toward the mucosa of the concavity; it is then made to prick through at the bottom and hindmost part of the cartilaginous deflection, and its blade is drawn forward, cutting from underneath outward through the bottom of the cartilaginous deviation along its whole length, thus severing it below. To cut through it at the back, an angular cartilage knife is chosen whose edge looks downward when its point is directed away from the concavity. This knife is also passed to the bottom of the mucous membrane pocket of the concavity underneath the cartilage (Fig. 13), its point turned away from the mucous membrane of the concavity, made to prick through the cartilage at the highest point in the rear of the cartilaginous deflection, and the blade is then made to sweep downward, severing the cartilage at the back. The other of the pair of angular cartilage knives is now inserted into the slit made by the first one, the

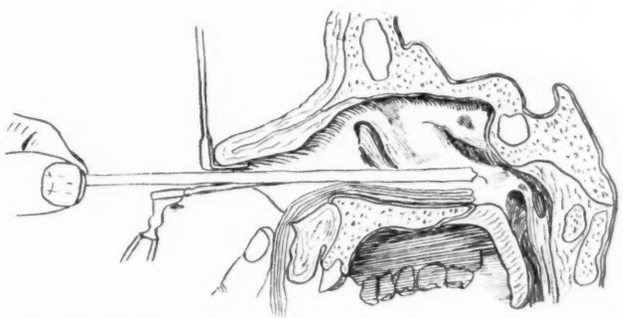

Fig. 17. Lateral view of nasal fossa. Two folded strips of the tampon lie in the naris, the loose ends being held with the finger against the upper lip. A third strip is being introduced stretched against the end of the probe.

handle depressed and the blade made to sweep forward, cutting through the cartilage above. The piece is now severed at all of its boundaries and is readily drawn out of the nostril.

If the cartilage be thick, repeated strokes of the knives instead of one cut will finally sever it. For very thick cartilage I have a pair with longer angular blades as a convenience rather than a necessity.

The whole maneuver is done with the aid of vision and under the intelligent guidance of the hand, so that one can exactly outline with the knives the piece to be removed. Remaining vestiges of the cartilaginous deflection may be pared off strip by strip with the angular knives, the sharp separator, or Ingals' knife, and I rarely now use cutting forceps on the cartilage.

Resection of Bony Deflections.—The punch forceps, according to my experience, removes bony deflections with more accuracy and less pain than any other instrument. It should be slender, so as not to obstruct the view and to move freely in the naris; the part in front of the lock should be straight and at least 3½ inches (9 centimeters) long, for bone may have to be cut at a distance of 2½ to 3 inches from the front of the nostril and a little length to spare is needed. The jaws should hinge on a rivet at the end of the forceps, so that they will separate

widely in a small space and so that the opening of the instrument will not obstruct the view, as it does when the jaws are moved on the rivet of the lock of the forceps. The forceps should be of the punch variety, one jaw fitting within the other, instead of merely having its cutting edge applied to that of its fellow, as the latter type of instrument will not cut bone unless it be made so heavy that it blocks the nostril. In spite of the qualities of length and slenderness the instrument should be so strong that it will easily cut through the thickest and hardest bone found in the septum.

The Gruenwald forceps, which I have used for years, possesses these qualities to perfection except the last, for bone was occasionally met with which this forceps, strong as it is, could not cut through, or only after its jaws were repeatedly closed on it. I have therefore strengthened Gruenwald's forceps by giving it a forceps handle instead of a scissors handle and by other changes, so that I now have an instrument that will cut through the heaviest bone in the septum, even the crista and anterior end of the vomer, with a moderate pressure of the hand. The slenderness and length of the forceps have been preserved and the jaws open laterally instead of vertically, as in the original, adapting the instrument still better for the septum. The blades are made only partly fenestrated, a ledge remaining designed to preserve the strength of the blade and to retain the excised pieces and keep them from falling out in the nose. My modified forceps,[1] like Gruenwald's, is made

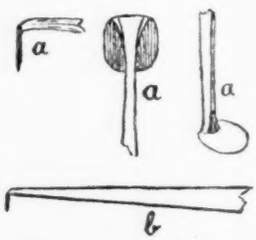

Fig. 18.—Hoe-shaped spatula for insertion into first cut in cartilage in order to pull the severed posterior edge outward so that the elevator may be passed underneath the cartilage. Useful where the deflection extends to the front of the nostril. Not mentioned in the text. *a, a, a*, enlarged views; *b*, natural size.

in three sizes. (Fig. 7, T). The operator needs the middle and smallest sizes. The large one is an occasional convenience.

The forceps is made in sets of two of right and left pattern, for it is convenient to use the fixed jaw, which has a smoothly rounded end, to push away the undermined mucosa should it apply itself to the bone on one or the other side of the deflection. On one side it always hangs away, commonly on the side of the concavity.

In addition to the punch forceps a chisel and mallet is sometimes needed to cut away the crista incisiva and anterior end of the vomer from the nasal floor.

Removal of the Bone.—The bony part of the operation receives such slight mention from most authors, and the means described for its performance are so inadequate, that the inference is natural that it is frequently not thoroughly done. Yet it is often the most difficult act of the resection, and unless all vestiges of the bony deviation be removed a half result is likely to occur, for which the surgeon will always feel apologetic.

In most bony deflections, in looking directly backward in the naris of the convexity, after completion of the resection of the cartilage, the steep superior border of the vomer is seen joined above, at an angle caused by the deflection, by the anterior inferior border of the perpendicular plate or more often by a remnant of cartilage which is the posterior angle of the quadrangular cartilage of the septum. The angle of deflection mentioned is the horizontal angle in vertical section, and it appears like a V lying on its side (Fig. 14), and it is this V which is to be followed up with the punch forceps until all of it is cut away and disappears and a plane part of the bony septum is reached behind it.

Looking downward at the floor of the nose the continuation forward of the superior border of the vomer and of the crista incisiva are seen, freed of cartilage, the vomer and crista curving over towards the naris of the convexity, sometimes so strongly that they lie nearly flat on the nasal floor, making the surface belonging to the concave side look upward and simulate the bottom of the naris.

The bony resection begins with the extirpation of the posterior V mentioned. On the concave side the mucosa usually hangs away from the V, leaving a space for the forceps blade, but the mucous membrane on the convex side is often kept closely applied because the bony V is wedged firmly against the inferior turbinated body. (Fig. 15). In such cases I have often had to spring it off with the spatula in order to insert the blade of the forceps. The spatula here also protects the mucosa by holding it against the turbinate. Nevertheless, in excising such deepseated, extreme bony deflections it is not always possible to preserve the hindmost, invisible part of the mucosa of the convexity and it is better to sacrifice it rather than to leave a part of the deviation behind in the depths of the naris. In some cases it is necessary to resect the bone to near the posterior border of the vomer. The forceps described cleanly cuts away the bone, piece by piece, and with surprising ease.

After the resection of the V posteriorly the curved over maxillary crest and front of the vomer, on the nasal floor, next need removal. They should be reinspected to see whether they are denuded of their covering, for though it may often be readily enough lifted off, its separation over these bony parts is often so difficult that it has to be put off until the last. It is frequently firmly adherent because, as is well described by Killian, the front end of the vomer and the crista in many instances are enveloped in their own periosteum, which, therefore, covers their upper border after the cartilage has been resected from it. This periosteum is continuous with and has the same color as the perichondrium lining the inner surface of the mucosa of the concavity, so that no boundary is visible where the latter is reflected onto the bone, and the edge of the bone can therefore not be seen, but must be felt for and cut down on with the round-edged knife. In most instances the bone then has to be dissected out from its coverings by keen dissection with the sharp elevator.

When the anterior end of the vomer and the crista stand bare, they may be cut away with my forceps if they project enough to be seized with it. If not, they may be chiseled away close to the nasal floor, the resulting fragment being removed with dressing forceps. The chisel is only suited to the strong, well supported base of the bony septum and should not be used higher up on it as it is apt to break the frail bone here and create far-reaching fissures. Breaking out of pieces by twisting with forceps is also to be avoided as it causes great pain and the result of such violence may be fracture into distant regions.

1. Fruenkel's Archiv. f. Laryngologie, vol. xvii, p. 172.

When the resection is complete the flaps will apply themselves smoothly, the septum will look straight and the surgeon can usually see the motions of the levator palati muscle in the naso-pharynx through the nostril that contained the convexity of the deflection, in fact I regard the sight of these motions as a proof that the operation is complete and the naris properly freed. No vestige of the deflection should be left behind. If somewhere the mucous membrane of the convexity will not lie flat against the septum one may be certain that there is still a projecting remnant of cartilage or bone to resect underneath it. The concave side should also be inspected to see whether the hollow be effected.

The Tamponade.—I still use sterilized lint, impregnated with powdered subnitrate of bismuth, for my tampon, and in no case, even when the plug has been left in the nose for a week, has it become offensive. The lint is cut in ribbons ¼ of an inch wide and 10 inches long. To begin packing a strip is folded in the middle, the end being held between the thumb and index finger of the left hand, while the right pushes the end of a stiff nasal probe such as Gruenwald's, against the bottom of the fold to hold the strip taut. (Fig. 16). Its ends may also be held with the thumb and finger of the same hand that holds the probe. The strip, stretched in this manner, is passed in along the nasal floor to a little beyond the posterior end of the window, care being taken to follow along the outer wall of the naris so as not to derange the flaps. The strip is then pressed down on the nasal floor with the probe. If the resection of a crestlike deflection has left an inferior pocket of mucosa, it is to be supported by the strip. In the same manner successive strips are then introduced (Fig. 17), one above the other, until the nose is nearly full, the ends of those in the naris being held against the upper lip with a finger while the next one is passed in. As the tampon builds up it sustains the flaps so that they cannot become displaced. They are not always redundant enough to meet exactly at their edges, but a small, raw surface left by their retraction is of no moment. The last strip is longer than the others and is tucked in on top of them in successive little folds until the naris is completely filled.

This packing may be relied on to prevent hemorrhage. A free watery discharge usually sets in an hour or two after the operation and as it is tinged with blood it is apt to make the patient think that he is bleeding and to lead him needlessly to disturb the surgeon unless he be told beforehand to expect an outflow from his nose.

The removal of the packing is begun on the second day after the operation, when the top strip is removed and as much of the rest as will pull out easily. When all hold fast or if there be a little bleeding the removal of the remainder of the packing is deferred until the third or fourth day. The parallel situation of the strips prevents excessive bulging of the mucosa over the window into the naris of the concavity.

The patient only needs to stay in bed on the first day after the operation. After that he may be up and about, but should not work for a week.

For the first week after the removal of the tampon the naris is kept closed with a pledget of cotton placed in the nasal vestibule by the patient and frequently renewed. This excludes dust and keeps the mucosa moist. After this period the patient may use the nostril for breathing, is told to spray it out with normal salt solution and to insert a little plug of wet cotton in the nostril for a few hours, whenever it is necessary to soften secretion. In addition an ointment of salicylic acid, 10 grains, to 6 drams of lanolin and 2 drams of vaselin is swabbed into the nasal vestibule by the patient to prevent hardened mucus from adhering. After four to six weeks the nose needs no further treatment.

This concludes my description. To many it may seem needlessly elaborate and detailed, especially as a number of authors have spoken of the submucous resection as an easy little operation that any one may perform with a few simple instruments. I regard these statements as misleading and likely to bring discredit on the method and my experience shows me that those who make them must be either men of little experience or not thorough in extirpating deflections, especially their more difficult bony portions.

In a number of resections there are many that are performed with surprising ease, and a series of these is apt to lead the surgeon to think that all of them may be done with like facility until a succession of operations, requiring great skill and patience, show him what difficulties may be encountered, especially in completely resecting bony deflections.

I do not claim that my method is the only way, but I assure those who will follow my directions exactly that they will not fail to remove, radically, any deflection, no matter what its form, nor how deepseated it may be, and it is for their guidance that I have so minutely described a method which, since it has become complete, has invariably given me a successful result and permanent relief to the patient with a minimum of traumatism.

Of late stress has been laid by some authors on completing the operation rapidly, as if there were need for haste. As in other procedures requiring care, delicate manipulation of frail structures and deliberation, any attempt to rush the work is apt to end disastrously by producing perforations, excessive traumatism and often an incomplete result. Haste makes a forcible, rough operation of one the very nature of which is neatness, deftness and painstaking. The temptation is great to proceed in spite of hemorrhage, and to work blindly in a field obscured by oozing of blood, or to elevate the mucous membrane, or cut away bone without the use of sight. Vision of the field of operation is essential to thorough work and the avoidance of perforations.

I see no need whatever for haste. The patient is not suffering pain. Even little children have endured the operation without complaint when the local anesthesia was made as I have described. The time lost by the surgeon in deliberate work should be gladly sacrificed in the interest of a more thorough operation for his patient. The chief source of delay is the oozing of blood in spite of adrenalin, especially from the bony parts of the field. If this occurs the operator should stop his work until renewed applications of adrenalin or cocain have arrested the hemorrhage, or until it has stopped of its own accord. Always work in a bloodless field if possible, even though to do so lengthens the operation.

DISCUSSION.

DR. W. S. ANDERSON, Detroit, uses the head mirror instead of the lamp. If the mirror is used over one eye the rays are parallel. It has seemed to him an advantage to use both hands in this operation, and when operating on the right nostril he makes the incision with the left hand. Dr. Freer's modification of the Gruenwald forcep is a good modification, for probably all have had some difficulty working with the ordinary Gruenwald forcep. Experimental work has shown that, at least in some cases cartilage, or very dense connective tissue, is again deposited between the layers of mucous membrane. It is surprising how firm the septum becomes in

those patients who have been operated on a few months previously. In Dr. Anderson's series of operations he had a larger portion of perforations in his early cases than he ought to have had. He now has very few, and he believes that as one develops in this work the perforations will become rare; it seems to be impossible entirely to eliminate them. Fortunately the functional results are good even if there is a small perforation. Frequently rhinologists say that small perforations should not be regarded, but Dr. Anderson feels that a perforation means poor surgery.

DR. CULLEN F. WELTY, San Francisco, said that Dr. Mensel's modification of the Krieg-Bönninghaus operation accomplishes the same as the operation demonstrated by Dr. Freer. He described the operation in detail, because he thinks it has many points of advantage, and is not so difficult of execution: A single incision is made in front just over the point of the cartilaginous septum, carried well to the floor of the nose. It must be remembered that the perichondrium is very adherent at this place, and particular skill must be exercised to avoid a perforation. In using the sharp or the blunt elevator the point should be kept turned well to the septum. Through this incision the whole of the deflected part of the septum is removed. After removing some of the cartilage the nasal speculum can be introduced into the cavity, and every step of the operation can be followed by the eye. After the perichondrium and mucous membrane have been sufficiently elevated on either side to overcome the obstruction the cartilage is cut above and below with small scissors; after this a sharp double curette is used to remove as much of the cartilage and bone as is necessary. This may also be removed by a strong forceps, with a twisting motion. In some instances a spur will be encountered. The perichondrium and mucous membrane are more adherent at such places, and particular care must be used not to cause perforation. The chances are very small of making a perforation on both sides at the same point. If the perforations are at different places the septum will be perfectly good. In case there is a thick, bony spur, which can not be removed with a double curette, a small chisel is very useful. In case an operation of any kind has been done previously on the septum the perichondrium is unusually adherent, and a perforation is most likely unless great care is observed. Twenty per cent. solution cocain is rubbed well into the mucous membrane on both sides of the septum until the patient can not feel the friction; 0.1 per cent. Schleich's solution is injected into the line of incision and on both sides of the mucous membrane until it becomes white. Adrenalin aids in keeping the operative field free from blood. The instruments necessary for this operation are nasal speculum, blunt and sharp elevator, double curette, small scissors, small chisel, anatomic forceps, two blunt retractors and, in some instances, a needle and thread. This operation originated by an accident, and Dr. Welty was the one to suggest its present form. He made a perforation by the old method, and maintained that had he not cut away the mucous membrane of the other side this perforation would have closed when brought in apposition. This happened some two years ago, when he had an *Arbeitsplatz* in Hajek's clinic. He stated that the only point to which exception can be taken is that in this operation the incision begins at the tip of the cartilage, while in the other operations it begins at the point of deflection. It remains to be demonstrated that harm can be done by removal of this anterior part.

DR. HILL HASTINGS, Los Angeles, said that in the operations on the bony septum he has not been so successful. Particularly under ether he has had a good deal of trouble, so that he has almost doubted the wisdom of operating under a general anesthetic. He operated in two cases that were failures under the Ashe operation, and in one case got a good result and in the other case a fair result. He asked the position of the patient recommended by Dr. Freer, and any difficulties he encountered under general anesthesia, and whether he has had any mortality or any trouble that might be attributed to the anesthesia.

DR. GEORGE L. RICHARDS, Fall River, Mass., said that if the operator has two assistants he can put the patient down and lift up the nose as Dr. Freer describes, but many have to operate with one assistant. Dr. Richards usually operates with the patient in the upright position. He has not had difficulty with the patient fainting. He tells them at the beginning that they will probably feel faint and sweat a few minutes. After this the anesthesia seems more profound and the patient will not give trouble by fainting. He always has the nurse stand immediately behind the patient. When it comes to using the chisel, he has taught his nurse to give a graduated blow just as the dentists teach their assistants. There will be very few perforations by any method if the operator can get all the cartilage off without injuring the opposite side. If one sets out to do the operation Dr. Welty has just described, which is practically the same as that of Killian, and one does get a perforation on one side, it does not matter, for then it is simply converted into another form of operation. Perforation in the old operations occurred so frequently because the operator did not get the two muco-perichondrium surfaces together. If these are separated by a bit of cartilage they will not unite. Dr. Richards thinks Dr. Freer did Dr. Killian a little injustice. He did not mention that the Killian knife has a double cutting surface. Dr. Ballenger's knife is arranged so that it may be used with facility. It is useless to say how many minutes is required to do the operation. What is desired is a good result from the operation rather than any saving of time. The operation that can be done in the simplest way and in the shortest time by most operators is through an incision somewhere in front. The muco-perichondrium is more adherent in front. To Dr. Richards the most satisfactory operation is with an incision in front, where the edge of the cartilage presents, such as Heik recommends, or a little farther back. Then with anything in the way of an elevator the perichondrium can be slipped back and the separation made. He does not attempt to remove any of the cartilage until the separation is complete. Then the cartilage and bone can be easily removed. It seems to him impossible that the forceps will do all that Dr. Freer states; he prefers a chisel on the nasal floor.

DR. GEORGE F. COTT, Buffalo, N. Y., declared each succeeding year makes the operation more difficult to understand. Dr. Welty has cut down the operation about 75 per cent., and Dr. Cott would like to cut down about one-half of the after-treatment. There is no difficulty from bleeding after the first twenty-four or forty-eight hours, and the patients may be permitted to breathe through the nose on the third day. In regard to perforations, in the ten cases in which Dr. Cott has operated during the past year, none of the patients have had perforations. It makes no difference whether part of the mucous membrane is destroyed on one side so long as the other side is intact. The instrument Dr. Freer has described, to go back through the posterior part of the nose and cut forward, may be useful in Dr. Freer's hands, but probably will not be popular with the profession in general.

DR. L. C. CLINE, Indianapolis, said that the lesson to be drawn from the great number of instruments recommended is not to make more instruments, but to see if we can not get along with less. He uses comparatively few instruments. Dr. Cline does not believe in making very extensive cuts in the mucous membrane. After making a small cut the membrane can be stretched and forceps and chisel can be used to remove the septum. Very little packing in the nose will cause pressure. The cartilage and bone should be cleared out so that it requires only sufficient packing to hold the membrane in place. It is better to leave the nostril open as much as possible so as to have the stimulation of the air.

DR. GARDNER PERRY POND, San Francisco, declared that Dr. Freer's position as to the trouble and inconvenience from frequent attacks of syncope on the part of the patient is well taken. It is extremely annoying. He does not understand the objection to general anesthesia in these cases. If a posterior plug is put in while doing the work in the anterior part of the nose it will do away with the draining back of the blood into the throat. Dr. Welty's operation is beautiful for a simple cartilaginous bend, but when there is a posterior bony ridge, or one low on the floor of the nose, the procedure he suggests will not enable the operator to get at it readily. The trephine on the dental engine works well in these latter cases. With it one can take out the greater portion of the bone and the rest may be trimmed out with forceps.

DR. GEORGE A. LELAND, Boston, agreed that there is an advantage in using few instruments. He was much impressed with Jansen's operation last summer because of its simplicity. This operator uses only a nasal speculum, a small scalpel, dressing forceps, a rather sharp elevator, and a cutting forceps, finishing with a needle holder and needle to suture the edges of the wound. If there is a bony exostosis he may also need a chisel, the mallet being used by an attendant. With these few instruments the operation is performed with marvelous neatness and dispatch. The great question in these operations is as to whether some time in the future there may not be a depression of the bridge. This operation has not been in vogue long enough to be sure that this result may not follow. A recent writer* says that if the cartilage is removed too high up the bridge of the nose may sink in. Hence comes the question how high up is one justified in removing the firm part of the septum. It has been said that this is not a support, but only a partition. To sustain this view a few cases of the loss of the whole of the septum without depression in specific disease are cited. Here, however, the question of time must come in. We frequently see a recent loss of septum where there is no depression, but after a number of years the relative positions may be much different. Dr. Leland said that this brings to mind a case seen some fifteen years ago. A physician from the far East desired to have a very much sunken bridge of his nose restored to its former position. He was about 50 years of age. When he was a student at the Bowdoin Medical College, Dr. Green, Maine's most eminent surgeon, in order to give him breathing space, with a scalpel removed the projecting part of a deflected septum from the left nostril. This made a very large perforation through the septum and yet there was a considerable amount of cartilage in the apex between the wings. The bridge remained up for a number of years, but after 20 or 25 years it had sunk in so as to produce a marked deformity. This would seem to show that the septum is a support as well as a partition. It is said by some that the cartilage is reproduced between the two layers of the perichondrium after they are brought back to the position we wish to obtain. It is said also by others that there is no production of true cartilage, but that between the layers of the perichondrium round celled infiltration takes place, which, according to its law produces a fibrous layer. In such cases, therefore, there may be not only the action of gravitation, but also that of contraction of this fibrous tissue, a double reason for sagging of the bridge. Of course this is only one case, but rhinologists have not yet been doing this operation more than about nine years, at least Jansen has been doing it nine years; hence Dr. Leland thinks that they are not in a position now to tell whether these bridges are going to sink in or not, and he cautioned taking away as little of the cartilage as possible, as he is by no means sure that some bold operaters may not be producing noses which will be greatly deformed after they who have produced them have passed on beyond the reach of adverse criticism and lawsuits.

A. A. GREENE, Anniston, Ala., said that Dr. Leland's remarks reminded him of a case he saw in which a large perforation had existed for over 35 years. The patient was a physician who had had the perforation when a student. The perforation is almost as large as a half dollar and there is no depression of the nose whatever. If the bony support is removed to a great extent there probably will be depressions, but sagging will not necessarily result from removal of the cartilage.

DR. A. DEVILBISS, Toledo, Ohio, said that he believes that there is much less danger of the ultimate production of a saddle-back nose if the membrane is all dissected back and membrane, bone, cartilage and all removed than when the membrane is left. For the last twenty years it has been his custom when there is a little hole in the septum to cut out enough bone and cartilage to have mucous membrane enough to cover the edge of the hole; this prevents crust formation. He would do the same were he to make an opening in the septum to secure free inspection. The long-continued pulling on the bridge is an important factor; there may be a depression from the constant drawing. Fibrous tissue will fill in the part where bone is removed and cartilage will grow in again when cartilage has been removed. Dr. DeVilbiss does not advise making promiscuous openings in these cases; the cases should be carefully selected.

DR. JOHN F. BARNHILL, Indianapolis, said that on several occasions this subject has come up in the Section meetings of the American Medical Association, and it has always brought out a great deal of discussion, certainly sufficient to give us to understand that this is not an operation for everyone to do and to expect to get satisfactory results in each case. These operations are difficult to perform. Each patient should be studied carefully and a suitable method devised for the particular case before the operation is begun. If rhinologists were to follow any one method in all the cases, disaster would result in a great many. After having done the operation as Dr. Freer directs it looks less formidable to Dr. Barnhill than before. Dr. Barnhill does not so often find the typical ridges Dr. Freer mentions, and often the mucous membrane is densely adherent, so that he has not been able to remove the cartilage without great danger of perforation. Some of Dr. Freer's instruments, especially those he uses for lifting the alæ of the nose, Dr. Barnhill has been unable to use. His assistant seems never able to hold the nostrils in as good position as can be secured by the use of the Myles speculum. He called attention to that class of angular deflection in which the crest lies so low in the nostril as to be apparently imbedded in the tissues of this region. If only the deflected portion above this low lying ridge is removed in the dissection, and the imbedded portion not included, that portion of the cartilage still remaining on the floor would hold the membranous flaps in a position far to one side, and practically so nearly in the old position as to give entirely unsatisfactory results. Dr. Barnhill has operated in several such cases, one of which failed because the exact condition was not previously recognized. The typical case as described by Dr. Freer has been somewhat uncommon in Dr. Barnhill's practice, and, therefore, he has been unable to follow the exact technic in a majority of cases. It has been said that small primary incisions are sufficient, but he has not found that true. He always feels better satisfied if he has a large opening through which he can see well, and use his instruments freely. The cartilage can be taken out rather easily, provided it is not greatly thickened or too angular at any point, with the Ballinger knife. When operating near the posterior end of the septum, the operator must do clean work, and this can not be accomplished by twisting and gouging, but only by the use of an instrument that will clearly cut off the parts without injury to the surrounding tissue. The burr has been mentioned as useful in the removal of the posterior bony part in these cases, but Dr. Barnhill does not believe the use of the burr permissible because it is apt to leave splintered parts in the deep membranous pocket which the operator may not be certain to remove. He does not believe any surgeon who is going to close up his wound would think of using the burr. The cutting forceps is much better. The fragments liable to be left by the burr would be irritant and would probably break through later, as would any other foreign body. He does not believe that there is any danger of saddle-back noses, provided nothing is done that will set up such violent inflammation as to cause the adhesions spoken of by Dr. DeVilbiss. The cases of saddle-back noses caused by syphilis are due, not to the fact that the septum is gone, but to the gummatous infiltration with subsequent adhesions which have pulled the tissue down. In submucous resection work, we do not think of causing any such reaction or subsequent contractile tissue.

DR. ROBERT C. MYLES, New York, said that in 1896 he read a paper (THE JOURNAL A. M. A., Sept. 28, 1896), in which he said that he had been operating for several years for the relief of this class of cases with very satisfactory results. He stated that there are two conditions which confront the operator in these cases: a projecting anterior extremity of the triangular cartilage which extends across the vestibular space and approaches the margin of the ala; and the various forms of deflections with more or less thickening of the convex side of the cartilage. In the first class of cases, the space between the ala and the projection is so narrow that when inspiration takes place in a rapid manner the atmospheric pressure forces

* Müller: The Technic of Kreigs Window Resection. Archiv. f. Laryngol., vol. xv, No. 26.

the ala against the cartilage. These patients become accustomed to contracting muscles of the side and front of the face for the purpose of pulling the ala away from the cartilage. Others sleep with the hand on the cheek, instinctively elevating the ala. This condition, Dr. Myles said, may be overlooked, especially when the nasal septum is involved, consequently it is well to test the inspiratory capacity with the mouth closed and with each nostril respectively closed. Dr. Myles said that he has had little success in attempting to replace the cartilage by fracturing the convex cartilage in the opposite nostril and then keeping the fragments in apposition with mechanical appliances until union takes place, and described the method of procedure in detail with the instruments used. He stated that in the majority of cases the wounds heal by first intention and that the after-treatment consists in filling the vestibule with aseptic cotton and leaving it in place for from two to three days. The results, he said, are beneficial in a respiratory sense; the appearance is much improved and a decided improvement is noted in the quality of the voice. Another form of stenosis which ought to be considered, Dr. Myles said, is caused by a deflection and circumscribed growth or enlargement on the convex side of the triangular cartilage; this also can be relieved by this method of subperichondrial dissection.

DR. OTTO T. FREER, Chicago, said that the head mirror gives rays parallel to the axis of the eye looking through the hole in the mirror, as well as does the Kirstein light, but he stated in the paper the use of the head mirror implies a light to reflect from, which dazzles the operator and limits the freedom of motion of his head. The Kirstein light, though not a necessity to the operation, permits more accurate work than does the head mirror, for it enables the surgeon to approach his eyes closely as he wishes to the operative field, so that even a presbyopic individual by the use of strong convex spectacles can get a magnified image of the details of the naris. This is of especial value in operating in the little nostrils of children. With the head mirror Dr. Freer is not able to get nearer to the work than 12 inches; with the Kirstein light he can approach to five when he wishes to look closely. Operators who are presbyopic or hypermetropic should always see that they have strong enough glasses before beginning the resection. He always uses the right hand for operating. Ambidextrous persons have an advantage here. Dr. Freer has often seen the firmness of the septum restored, but he can not state whether it was made so by hyaline cartilage, as a histologic examination was of course not possible. In children, the solidity of the septum is reproduced in a few weeks because of the great formative energy of their tissues. He agrees with Dr. Welty that the method of Menzel and Hajek is less elaborate. The question is, does it accomplish the object as well? Is it an advantage to confine oneself to a few instruments, and are such simple implements well adapted to fit all types of a deformity presenting such great variations in form, degree and difficulty as does deflection of the septum? The method of Menzel favors perforations, and what is worse, incomplete operations on the bony part of the deflection. In addition, by beginning always at the front from the free border of the septum, a certain amount of perfectly straight septal cartilage is sacrificed in order to reach deflections beginning deeper in the nose, an objection to Menzel's procedure urged by Weil. The elevators known as Hajek's in this country are used in the Menzel operation, and have been extensively introduced here. Dr. Freer admitted that they are few and simple, in fact only two, but they are thick and clumsy and too large for deflections. They would fill the nostril of a child, and one often has to operate on children. A thick, blunt elevator, like Hajek's blunt one, is liable to plunge through where the mucosa is adherent, because force is necessary to undermine with thick implements. Menzel's method is well adapted to certain cartilaginous deviations where the separation is easy, but not to difficult resections where there is much adhesion of mucosa or where the bony septum is involved. All the German methods of performing the window resection are marked by a certain roughness. German authors speak of breaking out of bone and cartilage with dressing forceps; in fact, Mueller attributes some slight depressions of the nasal bridge he mentions as due to his having broken out cartilage under it. The cartilage should always be cleanly cut away and never broken or twisted out. Dr. Freer said that he has heard before the assertion that the operation may be done with a few simple instruments that do not even need to be specially made for it, for the man is always with us who thinks that he can do offhand with his jack-knife what others accomplish by taking pains with proper tools. Some kinds of rough wood work may be done with an ax, but if Dr. Freer wanted finely finished cabinet work he employs an artisan who has a full set of tools; planes, chisels, squares and everything. Those unfamiliar with the operation should not be deceived into thinking that it is so simple in every instance that the use of instruments especially fitted for the purpose may be safely discarded. Those so poorly equipped will be apt to abandon the operation after encountering a few difficult cases or else will get the proper outfit for the work. The chief reason for a larger instrumentarium is that there are odd intricate cases that require odd instruments. He fashioned his original blades from steel forms on small grinding wheels, run on an electric lathe. According to the lessons taught him by cases as they arose, he changed his models until they reached a state which required no further alteration. A special feature of his instrumentarium, permitting rapid and neat work, is the presence of a number of keen thin blades for dissection, a feature lacking in many other collections of instruments; their devisors seeming to have the forcible pushing off of the mucosa from its attachment chiefly in mind. Keen dissection is, however, constantly required, because of the frequency of adherent places. Scissors he does not regard as at all adapted to the work, and he never uses the saw. In reply to a question about general anesthesia, he said that he has never used it for adults nor for children over 11. For children of 11 or younger he uses just enough chloroform to make them unconscious of their surroundings, but relies on the cocain local insensibility to subdue pain. Dr. Freer said that Dr. Richards' experience in respect to spells of faintness is not in accord with his. Though he has never had a patient in actual syncope from sitting up, he has had a number come close to it, and so thinks it preferable to do most of the work with the patient lying down. He can see no reason for trying to make the operation a speedy one at a sacrifice of exactness. The patient does not suffer, and haste means careless work and perforations. He requires from one-half to one and one-half hours, according to the difficulties met, and can not understand the statement of Killian that he completes his operation in the average time of twenty minutes, nor how any one can radically and neatly resect deflections in such a rapid manner. He agreed with Dr. Cott that in most cases the danger of spontaneous bleeding is over in twenty-four hours, but if the packing be removed at this early period it is apt to start a fresh traumatic hemorrhage, because the tampon still adheres to the mucosa, while by the fourth day it is covered with slippery mucus and may be pulled out readily. He has had some very exciting times in the few cases in which he allowed himself to pack loosely, profuse delayed hemorrhage occurring a few hours after the operation, so that he is not satisfied now unless the packing be even and firm. He has had no bleeding since he has used my present method of tamponing. He thinks it reckless not to pack at all, and strongly advises against it. He has never needed to tampon the nasopharynx while operating. What little blood escapes the swabs and flows back into the nasopharynx is swallowed unnoticed by the reclining patient. He used the dental engine a great deal in his earlier work, but since he has new bone-cutting forceps he has practically discarded it. The trephine works more or less in the dark, is hard to control, tears up the mucosa and bores into unknown depths in a way that is uncanny. The burr he finds less efficient than the trephine. Dr. Freer said that he is sorry that such theories as the possibility of depressed nasal bridges and formation of cicatricial tissue in the septum are being raised to delay the advance of a method that removes all deflections so certainly and with so little injury to the patient as does the submucous resection. The purely fanciful objection made is not borne out by any recorded experience, in spite of the fact that Krieg reported his first window resections in 1886, nineteen years ago. Surely, that

is time enough for the formation of cicatricial retraction. Dr. Freer has examined a number of his earliest patients, but in none of them was there the slightest evidence of sinking in of the nasal profile or of any cicatrix in the septum whatever. Instead of that, in all of these cases there was a complete or nearly complete replacement of the firmness of the septum. If a cicatrix were going to form it would surely begin to show some of its evil effects in the course of the four years that have passed since his first operation, for scars in the other parts of the body are not so slow in creating retraction, and at least some cicatricial drawing in of the mucosa of the septum would be seen, yet he has never observed anything resembling it. A large perforation, as suggested, would make the nasal chambers unduly roomy and lead to crusting on its edges. Dr. Freer has never seen sinking in of the nasal profile as an immediate or early result of the operation. He has often resected the cartilage from its free border to the bony septum, and as high as the perpendicular plate, and has never seen sunken noses as a consequence, even in the least degree. Killian, with his great material, reports no such deformity. Mueller and Menzel, however, mention slight sinking in of the profile in a few cases, and think it due to resecting the cartilage too closely under the triangular cartilages of the external nose; that is, directly under the nasal bridge. Dr. Freer suggested in his article that a narrow strip should be preserved in order to be in accord with their experience, although it is unique. The submucous resection is an operation for the rhinologist, requires the proper outfit and above all rhinologic skill, and is not for the general surgeon. It would be surprising if Dr. Myles had not thought out the principles of the window resection long ago, as he has thought out most of the things we think new, and he has certainly established his claims to be among the first by the reprint he has shown us to-day. Dr. Freer called attention to another misleading remark often made, that the mucous covering may be peeled from the deflection as easily as the rind from an orange. It peels off easily very often, but just as often does not, and it is in these adherent cases that minute, careful dissection is needed to avoid a perforation.

Special Article

IMMUNITY.

CHAPTER XXVII.

TUBERCULOSIS.

Tuberculosis is as old as the history of medicine, and its contagiousness was assumed but not demonstrated at a very early period. Klemke in 1843, but more particularly Villemin in 1865, demonstrated the infectiousness of tuberculosis by animal experiments, and these results were substantiated later by such investigators as Klebs, Chauveau, Baumgarten and Conheim. As the era of specific microbic etiology developed search for the germ of tuberculosis began and for a period a number of organisms were erroneously considered as the cause. Of these the *Monas tuberculosum* of Klebs obtained considerable prominence. Baumgarten first saw the tubercle bacillus in sections of tubercular material from which the tissue cells had been dissolved by potassium hydroxid, and at almost the same time Koch succeeded in demonstrating its presence in all tubercular lesions by a special staining method. He eventually obtained the organism in pure cultures with which he again produced tuberculosis in experiment animals.

Characteristics of the Bacillus.

The tubercle bacillus is an obligate aërobic parasite, has the form of a slender, non-motile, non-flagellated rod, often slightly curved, from 2 to 4 microns long and from 0.3 to 0.5 microns broad. In stained and even in unstained specimens, when properly treated, a number of spherical, oval or elongated clear spaces can be seen which at one time were thought by Koch to be spores. They are now considered either as vacuoles, or as representing some form of degeneration or reserve nutritious material. True spores have not been positively demonstrated, although their existence is upheld by some observers. The organism is supposed to possess a membrane which may be responsible for the rather strong resistance against heat and desiccation which the bacillus manifests. Feinberg speaks of a nucleus which may be demonstrated by a modified Romanowsky stain. The organism shows many variations in its morphology under different conditions. It often exists in isolated clumps, either in cultures or in tissues, and may be excreted as such in the urine. In certain cultures and sometimes in animal tissues it grows in the form of longer or shorter branching threads, in this respect resembling the actinomyces. This last occurrence has led a number of authorities to class the tubercle bacillus as a streptothrix, while others would give it an intermediate position between true bacteria (schizomycetes) and the streptothrix (a hyphomyces). An oval or spherical degeneration form of the organism is found in advanced tuberculosis of the lymph glands and other organs in which there is a great deal of necrosis. These have been called the capsules or, more properly, the corpuscles, of Schrön.

Staining Properties.

The tubercle bacillus is one of a group of organisms which are said to be "acid fast" in their staining properties. When stained with the carbol fuchsin of Ziehl and subjected to the action of mineral acids in dilute solutions the fuchsin is not removed. After this treatment it is customary to counterstain with an alkaline solution of methylene blue. In such a preparation the tubercle bacilli appear red, whereas other organisms which are not "acid fast" are stained with the methylene blue. It is not difficult to recognize the bacilli in sections of tissue when the proper technic is used, although the search is at times a laborious one. In old processes the organism often can not be recognized, and recourse to animal inoculation may be necessary in order to demonstrate the existence of tuberculosis.

Pure Cultures and Culture Media.

It is ordinarily a difficult technical problem to obtain the tubercle bacillus in pure culture, the technic of which we need not consider. Even under the best conditions growth is very slow, and may not be recognizable to the naked eye for from six to ten days. Coagulated serum of the cow to which has been added from 2 to 4 per cent. glycerin is the most favorable culture medium. Good growth occurs also in glycerin agar and in glycerin bouillon and on potatoes. The optimum temperature is 37 C.; growth does not occur above 42 nor below 30 C. When a small amount of culture is planted on the surface of the glycerin bouillon it proliferates slowly to form a heavy membrane which extends over the surface. In time this growth sinks from its own weight and a new membrane forms. This process continues until large masses have accumulated at the bottom of the flask.

Resistance.

The organism is very resistant to desiccation, living approximately three months in dried sputum. Only spore-forming organisms exceed the tubercle bacillus in their resistance to desiccation. Sputum appears to give it a certain protection against desiccation and light. Direct sunlight destroys it in a few hours at the most, whereas diffuse light kills it only after from five to seven days (Koch). It is said that the guinea-pig when exposed to sunlight withstands tuberculosis for a longer time than one which is kept in the dark. Roentgen rays are bactericidal for the organism, killing it in about one hour (Rieder). Under moist heat a temperature of 55 C. kills it in from four to six hours, 60 C. in one hour, 70 C. in from ten to twenty minutes, 80 C. in five minutes, from 90 to 95 C. in from one to two minutes. When embedded in sputum it is more resistant, five minutes being required to kill it at the boiling temperature. Corrosive sublimate is not a good disinfectant in this case, inasmuch as it produces an albuminous precipitate around the organism which prevents penetration of the sublimate. Five per cent. carbolic acid added to equal parts of sputum kills the bacillus in twenty-four hours. Formalin vapor is a good disinfectant for dry, but not for moist sputum. Iodoform is not a good disinfectant, in spite of its beneficial influence on the infectious process. The resistance of the bacillus to gastric digestion has an important bearing on the occurrence of infection in the intestinal tract.

The gastric juice of the dog, in one instance, failed to kill it after six hours' exposure, although it had the power of prohibiting proliferation.

The bacillus of human tuberculosis, although fairly constant in its virulence, may be attenuated by various means. Its prolonged existence in putrid sputum decreases its virulence and a similar decrease occurs on potato, in old cultures or in those which contain iodoform, boracic acid and some other substances. Inoculation with such cultures produces a chronic form of tuberculosis in animals which may heal. In other instances cultures which have grown on artificial media for many years retained their original virulence.

Virulence.

The organism contains about 90 per cent. of water. One-fourth of a dried bacterial mass may be extracted as a wax-like or fat-like substance by a mixture of alcohol and ether. The acid-fast staining property of the bacillus depends on this substance. The remaining portion of the mass, consisting largely of proteins, which may be extracted by dilute alkalies, contains a toxic nucleo-albumin. Cellulose, representing a portion of the capsular substance, is also found in the residue.

Killed cultures when given subcutaneously produce necrosis, abscesses, caseation, marasmus, and a subnormal temperature. When given to rabbits and guinea-pigs intravenously they cause rapid emaciation and death in from a few days to a few weeks. By beginning with very minute doses, however, the animals may be gradually habituated to intoxication by the dead bacilli and eventually withstand large doses. The same holds true of the various toxic substances, including tuberculin, which may be extracted from cultures. The proteins and alkaline extracts cause abscesses when given subcutaneously. The fever-producing substance which is present in the preparations mentioned below is one of the metabolic products of the bacillus, rather than a constituent of the bacterial cell (Koch). This substance is 100 times as toxic for tuberculous animals as for healthy and causes an increase in the eosinophiles of the blood. In addition to the fever-producing substance, Maragliano and others recognize as a constituent of the bacillus a heat susceptible "toxalbumin" (destroyed at 100 C.) which reduces temperature. Hammerschlag speaks of a toxin which in animals causes fatal convulsions. The toxic products of the tubercle bacillus show their greatest toxicity when injected into the brain, and this method of injection has been suggested for the standardization of tuberculin.

Toxic Products.

Of the toxic preparations of the bacillus the greatest interest attaches to tuberculin which Koch, in 1891, announced as an agent which could be used for the specific diagnosis of tuberculosis and which, when properly administered, had certain curative effects. Its preparation is simple. Cultures are allowed to grow for four weeks in peptone bouillon which contains 5 per cent. of glycerin. At the end of this time the organisms are killed by exposure to a temperature of 100 C. for one hour (Marx). The fluid is reduced to one-tenth its original volume by evaporation under a vacuum at a low temperature and the bacterial cells are eventually removed by filtration. The percentage of glycerin which is present in the final preparation acts as a preservative, but 0.5 per cent. carbolic acid may be added in addition. The active substance in tuberculin may be precipitated by 66 per cent. alcohol; its chemical nature remains unknown.

Tuberculin.

In addition to the "old" tuberculin, which has just been described, Koch has prepared several variations of the substance, the use of which has been proposed for diagnostic and curative purposes and for convenience in carrying out the agglutination reaction. One of these, "TA," is an alkaline preparation which is made by extracting cultures with 1/10 normal sodium hydroxid solution. Its value as a diagnostic was equal to or exceeded that of tuberculin because of the longer duration of the reaction. In view of the fact, however, that it contained undissolved cells, which caused the formation of abscesses at the point of injection, its use was not encouraged. For purposes of immunization Koch prepared a fluid which contained all the bacterial constituents and which at the same time is readily absorbed without abscess formation. For its preparation dried masses of the organism are ground up in an agate mortar and after suspension in distilled water and centrifugation, the emulsion consists of two layers. The overlying opalescent whitish fluid was designated as "TO" (Tuberculin Obers). After removal of the fluid from the precipitate the latter was again dried and ground, suspended in water and centrifugated as before, and the process repeated until none of the sediment remained. The different fractions of fluid, except the "TO," were combined to constitute "TR" (Tuberculin rest), which is really an emulsion of minute fragments of cells. It is readily absorbed and does not cause the formation of abscesses. This is commonly called Koch's new tuberculin. Still another preparation which Koch has recently devised for active immunization and for convenience in performing the agglutination test consists of dried and ground up bacilli which are suspended in equal parts of glycerin and water, *Neutuberculin* Koch (*Bazillenemulsion*). The immunizing value of these preparations will be considered in the next number of THE JOURNAL.

"TA" and "TR" Preparations.

Preparations which in many respects are analogous to those of Koch have been made by different investigators: the tuberculocidin of Klebs, the tuberculins of de Schweinitz and Dorset and that of Denys, the two toxins or tuberculins of Maragliano, which he utilizes for the preparation of anti-toxic serums, the oxytuberculin of Herschfelder, the "TD" and the "TDR" of Behring and the tuberculoplasmin of Buchner. Marmorek claims to have produced the true toxin of the tubercle bacillus by growing young, vigorous cultures on a complicated medium, denying that tuberculin represents the true toxin of the organism.

Other Tuberculins.

Tuberculin can not be standardized with accuracy. From the fact that tuberculous animals are extraordinarily susceptible to injections of tubercular preparations Koch decided to estimate the value of tuberculin by determining its fatal dose when injected in tuberculous guinea-pigs. From 0.5 to 1 c.c. of tuberculin, when injected into a healthy guinea-pig, causes neither a local nor a general reaction, whereas from 0.1 to 0.15 c.c. kills a tuberculous guinea-pig in from twenty-four to forty-eight hours. This phenomenon will be considered later in connection with the so-called agressins of Bail. For standardization von Lingelsheim recommends intracerebral injection into healthy guinea-pigs, because of the extreme toxicity of tuberculin when introduced into the central nervous system; only 1/180 as much tuberculin was required to cause death by intracerebral injections as compared with subcutaneous or intraperitoneal. Behring bases the value of tuberculin on its toxicity for healthy guinea-pigs and in his terms the expression " 1 c.cm. = 1,000 M." means that one gram of the toxin is fatal to 1,000 grams of guinea-pig tissue. His "TD" has a value of 1,250 M., and "TDR," 12,500 M.

Standardization.

(*To be continued.*)

Clinical Reports

CASE OF EXTREMELY LONG PREGNANCY.

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KALISPELL, MONT.

I have had an exceptional opportunity for obtaining accurate data in a case of long pregnancy, and later, of finding what seemed to be the probable cause.

Patient.—Mrs. T., aged 46, height 5 feet 5 inches, weight 155 pounds.

Previous History.—The patient has always enjoyed good health; she has had nine normal confinements, her oldest child being 23 years old, the youngest 5 years, all living; she never had a miscarriage and never vomited except when pregnant. She has always vomited for the first three months of pregnancy, and has never been more than a week out in the expected date of confinement. Menstruation was always regular

till the last child was born, since which time she has occasionally missed one or two periods, which she thought was due to a change of life.

History of Pregnancy.—June 29, 1904, she commenced vomiting, and a few days later menstruation failed to appear. July 1, 1904, her husband, whose work called him to Idaho, left here, and did not return till sometime after the confinement. When he left both patient and husband considered that she was pregnant. During the entire pregnancy she lived here with her seven children. The last menstruation commenced June 5, 1904, and lasted till June 9. Vomiting commenced June 29, 1904, and lasted till March 1, 1905. Fetal movements were first felt Oct. 15, 1904.

Examination.—About April 1, 1905, she began to worry about going overtime and sent for me. Examination showed appearance of full term; child in L.O.A. position; fetal heart in left iliac region, 132 beats to the minute; movements very active. Patient's urine was normal.

Further History.—I left her, assuring her that there was no cause for worry, and as far as I could make out everything was all right. During April I heard from her frequently, and told her to take considerable exercise in the open air, hoping that this would start up the pains.

On May 8, 1905, I made another examination and the following notes: "Uterus quite large, fetal heart in left iliac region, 132 beats; position of child L. O. A.; movements very active; head above brim. At the external os, two rounded masses are felt which seem to be attached to the cervix."

By this time I was becoming anxious about letting the case go any longer, as the uterus was very large. The patient was also getting tired of waiting, so I promised if labor did not start by next day, to induce it. As nothing had happened by next day, I prescribed capsules of quinin sulphate grs. 5, one every four hours, and after taking four, the pains started.

Labor.—The first stage of labor started at 12:15 a. m., May 10, 1905. At 2:15 a. m. the water broke (moderate in amount), and at 2:30 a. m., when I arrived, the pains were quite strong and frequent.

During the second stage, while the head was coming down, and while I was making an examination, I felt two masses (which I had noticed at a previous examination) descending. I then realized that some abnormal condition was present, and were it not that the position of the child had been made out so plainly previously, I could easily understand how a snap diagnosis of breech presentation (these masses felt exactly like testicles) could have been made. At 4 a. m. an anencephalic monster was born. The masses which had puzzled me now proved to be the exposed brain. The third stage terminated at 4:30 a. m., May 10, normally, no laceration or hemorrhage occurring. The puerperium was normal in every respect.

Description of Child.—The child was a large male, well developed in every respect except its head. One hour before birth the fetal heart was distinctly heard, and the movements were very active, but when the child was born no attempt at respiration was made.

The following measurements and observations were made: Length, 22½ inches; weight 10 pounds (appeared much heavier); circumferences: bisacromial, 16 inches; bistrochanteric, 14 inches. The placenta was large, oval, 1½ pounds and normal in every respect. The cord was 36 inches long, of moderate volume, no knots and apparently normal.

Remarks.—The cause of the prolonged pregnancy in this case may have been partly due to patient's age, 46, and the number of previous pregnancies producing uterine sluggishness, but the peculiar condition and shape of the head, preventing engagement and suitable pressure on the os uteri, probably had more to do with it. It might have been interesting to have known how long this case would have gone had no quinin been given to cause uterine contractions.

Summary of Duration of This Case.—From commencement of last menstruation, June 5, 1904, 339 days; from last intercourse, July 1, 1904, 313 days; vomiting lasted from June 29, 1904, to March 1, 1905; quickening occurred Oct. 15, 1904; confinement occurred May 10, 1905.

A CASE OF SO-CALLED "MUSICAL HEART."

JOSEPH M. PATTON, M.D.

CHICAGO.

The case here reported is of unusual interest because of its rarity and because of the fact that, during a period of about fifteen years previous to death, the patient had been observed and examined by probably a greater number of physicians and students than any other individual of which we have record. During this period he made a living principally by posing for purposes of demonstration before medical classes, both undergraduates and postgraduates, and on one or two occasions was on public exhibition as "the man with the musical heart."

Patient.—The patient was 38 years old at death. According to his statement he was of Russian birth and had been exiled to Siberia, but had escaped and emigrated to America about fifteen years ago. Shortly after reaching this country, and while in New York City, he suffered from inflammatory rheumatism and entered Bellevue Hospital. It was while in this institution that the peculiar murmur, which was afterward studied by so many physicians, was discovered, and presumably it was developed at that time, at least there appears to be no evidence to the contrary. My personal knowledge of the patient dates back about twelve years, when he appeared at my clinic for the first time. He carried a number of written diagnoses, some of which were more or less fanciful and presupposed all manner of lesions of either the right or left sides of the heart or both. The patient himself claimed that his heart had been wounded by a sword thrust. There was, indeed, a scar on the chest wall about two inches below the nipple, but this scar was entirely superficial, and it was not apparent that, whatever the cause of the injury, it could have had anything to do with the cardiac state.

Examination.—Examination at this time determined an hypertrophied and dilated heart. The impulse was heaving and diffuse, and its area was markedly increased. The apex impulse was under the seventh rib, about two inches to the left of the mammillary line. The cardiac rhythm was somewhat irregular. Auscultation determined double mitral and double aortic murmurs. The mitral presystolic murmur was short and ill defined, while the regurgitant exhibited the usual characteristics. The aortic regurgitant murmur showed the ordinary quality and area of distribution, but the obstructive murmur was only to be distinguished above the first rib, because of the greater prominence of the systolic musical murmur which constituted the unique feature of the case. This murmur was a distinct musical note occurring with the cardiac systole and heard all over the precordial area, but plainest from the second rib to the fifth interspace along the left parasternal line. It was not transmitted in any particular direction, but was gradually lost as the distance from the area of the greatest intensity increased. The pitch of the sound varied, at times being high and sharp, and again being lower and more sonorous. The length of a murmur also varied considerably. At times the sound could be heard with the ear close to, but not in contact with, the chest wall, and at other times the sound could not be heard unless the ear was in contact with the chest wall. The patient suffered no special inconvenience as long as he did not exert himself.

Diagnosis.—The diagnosis at that time was double aortic and double mitral lesions, and a musical murmur originating in the left ventricle and probably due to some abnormal condition of the chordæ tendineæ.

Subsequent History.—The patient was observed at intervals ever since, and until the past winter there appeared to be little change in his condition. In February last he appeared at my office complaining of being ill and stating that a short time before the musical murmur had disappeared. It was over the latter fact that he was specially concerned, and he was much cast down when I told him that it was not probable that the murmur would return. He was suffering from an acute bronchitis of the base of the lungs and had a temperature of 102 F. He was sent to the Policlinic Hospital and remained there a week. His heart at this time was dilated

and the mitral and aortic regurgitant murmurs were the only ones to be heard. He improved under treatment and left the hospital. A month or so later he appeared at my office with temperature, cough and dyspnea, and he had evidently lost strength. The bronchitis had not cleared up and his heart was acting badly. He would not go to bed or stay in the house. His last visit to my office was on May 26. He died on the night of May 30. I did not see him in the interval.

Autopsy.—The postmortem, which included the heart only, was made by Dr. John Fisher. There was a moderate amount of fluid in both pleural spaces and in the pericardial sac.

Heart: The examination of the heart was made early the following morning by Dr. Fisher and myself, and disclosed the following conditions:

Weight of heart	19 ounces.
Wall of left ventricle	25 mm. thick.
Wall of right ventricle	6 mm. thick.
Wall of left auricle	3 mm. thick.
Wall of right auricle	2 mm. thick.
Length of cavity of left ventricle	90 mm.
Length of cavity of right ventricle	65 mm.
Left auricle much dilated.	
Mitral opening, oval	37x22 mm.
Aortic opening somewhat triangular	20x15 mm.
Tricuspid opening,	45 mm.

The mitral valves were markedly vegetative, the anterior cusp being unusually long and covered with coarse vegetations (Fig. 1). Its edges were deeply serrated. Two chordæ tendineæ which were attached to the tip of the anterior cusp and to the papillary muscle at the apex of the ventricle were thickened and covered with fine vegetations. Their valvular attachment was broken and they floated loose in the cavity of the ventricle, being attached only to the papillary muscle. The aortic valves were retracted by curling and thickening of their edges (Fig. 2). From the corners of the base of the cusps, on their aortic surface, there are short cords about the thickness of chordæ tendineæ, from one and a half to two centimeters long, which attach the base of the cusps to the vascular wall. Anteriorly there are two of these cords, posteriorly and to the right there are two, and posteriorly and to the left there are three. A communication exists between the right auricle and the base of the left ventricle, the auricular opening being near the base of the posterior cusp of the tricuspid valve, and the ventricular opening being between the base of the left cusp of the aortic valve and the base of the anterior cusp of the mitral valve (Fig. 3). This opening admits a match, but its auricular orifice is closed by a papilla which acts as a valve.

Summary.—The gross findings in this case are those of double lesions of the mitral and aortic orifices. Concerning the production of the musical murmur, there are only three factors to be considered in view of the integrity of the auricular and ventricular septa. These factors are the connection between the right auricle and left ventricle, the cord-like attachments to the arterial surface of the base of the aortic valve cusps, and the thickened chordæ tendineæ, whose attachment to the mitral valve had been broken. It is hardly conceivable that either of the two former could be of importance in this connection, because it is not evident that there was much or any current through the opening between the right auricle and the left ventricle, or that the adventitious cords in such a situation could possibly be connected with the production of such a long, high-pitched sound. Again, these conditions were still present after the murmur had absolutely disappeared, the heart action meanwhile being relatively good. The sudden disappearance of the murmur before the heart showed serious signs of failure can only be explained by the breaking of the valvular attachments of the chordæ tendineæ, which were involved in the inflammatory process. The greater tension of these cords during systole, which would be the result of their thickening, might easily result, with a cord of such length, in the production of a high pitched and sustained tone as characterized the heart action in this case.

Whether we accept the views of Corrigan and of Chauveau of the origin of a murmur in the blood stream because of the vibration produced when blood enters through a narrow into a dilated portion of a blood vessel, or those of Heyncius that a murmur is due to the production of eddies in the widest portion of a vessel—and there appear to be no very great difference in the physical principles involved in these theories—it is evident that we can not apply to the cause of the murmur in this case the basic principle governing the production of ordinary murmurs that they are primarily vibrations of the blood stream. The pitch of this murmur, and its harmonic element as well, would require a degree of tension not compatible with the circulation of the blood stream, and only to be found in some denser structure. These physical reasons, therefore, bring us back again to these broken cords for an explanation of this murmur.

If, then, we can not apply to the cause of these distinctly musical murmurs (I employ the qualification here in contradistinction to the harsh, almost musical sounds at times produced in cases of aortic or mitral obstruction), the physics of the ordinary bellows murmur of the heart, and assume that they necessitate the rapid vibration of some of the organized structures of the heart itself, we must admit that they have also a different prognosis. Musical murmurs, as a rule, are of much more serious import than ordinary blowing murmurs. In several instances I have observed their appearance in serious cases of endocarditis at varying periods before a fatal termination. In one case of ulcerative endocarditis involving both aortic and mitral orifices a pronounced musical systolic murmur developed a few days before death. This sound was so loud that it could be heard distinctly at a distance of four or five feet from the patient's chest.

An important deduction to be drawn from this case is that musical murmurs of this character indicate a more extensive degree of involvement of the tissues of the heart than is necessary for the production of the ordinary blowing murmurs.

FASCIOLOPSIS BUSKII (DISTOMUM BUSKII).

THE FIRST REPORTED CASE IN THE UNITED STATES. FOUND IN A PATIENT DYING OF TYPHOID FEVER.*

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GALVESTON, TEXAS.

Attention has been called by one of us[1] to the possibility of finding many of the parasites of tropical countries were we systematically to look for them. We are pleased to present a specimen of a rare intestinal parasite, in fact the only recorded case of this fluke occurring outside of Asia, according to Stiles,[2] from whom we have gained the most of our knowledge of this fluke.

Fig. 1.—*Fasciolopsis buskii.* Original observation. Natural size. Length, 4 cm. Width 1.6 cm.

History of Case.—The parasite was found in the intestine of a Laskar who was sick aboard an English steamer in this port, and who was removed to the St. Mary's Infirmary, where Dr. Moore saw him. The case was diagnosed as probably typhoid fever, but as he died the following day the diagnosis was not confirmed until it was done by postmortem. The specimen of parasite was found in the intestine while doing the postmortem, and along with the fluke we found a large *Ascaris lumbricoides.* The fluke is of interest on account

* Read before University of Texas Medical Club, 1905.

1. Moore: Tropical Diseases, etc., Texas Medical News, July, 1903.

2. Illustrated Key to the Trematode Parasites of Man.

Fig. 1.—Mitral valves, ventricular view.

Fig. 2.—Aortic valves, arterial view.

Fig. 3.—Aortic valves, ventricular view.

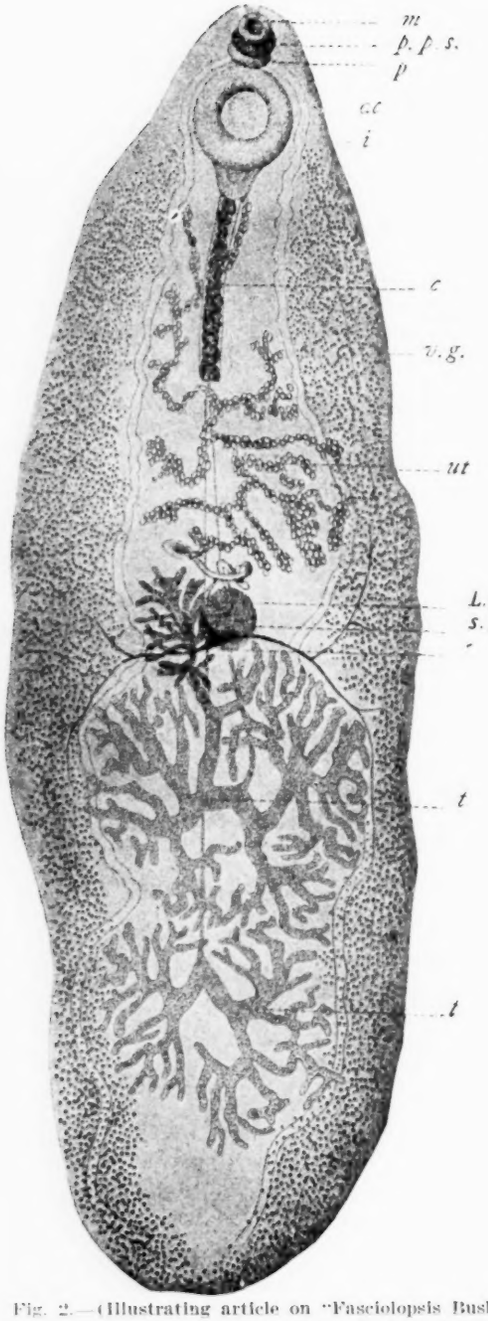

Fig. 2.—(Illustrating article on "Fasciolopsis Buskii," by Drs. Moore and Terrill.) Ventral view of *Fasciolopsis buskii*, enlarged to show the anatomy; ac., acetabulum; c., cirrus; L. c., Laurer's canal; m., mouth with oral sucker; ov., ovary; p. pharynx; p. p. s., prepharyngeal sphincter; s. g., shell gland; t., testicles; ut., uterus; v. g., vitellogene glands. × 6. (After Odhner, 1902, Fig. 1.)

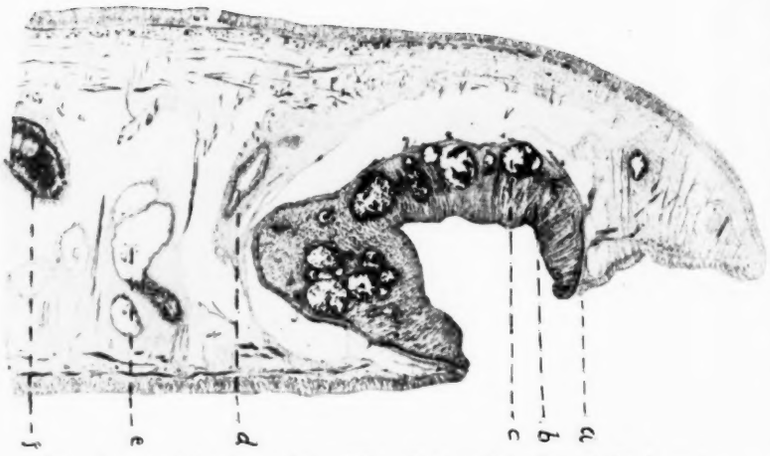

Fig. 3.—*Fasciolopsis buskii.* (Microphotograph.) Longitudinal section of anterior end, a little to right of median line. a, Male genital pore; b, acetabulum; c, cystic degeneration in muscle of acetabulum; d, vesicula seminalis; e, uterus; f, cirrus.

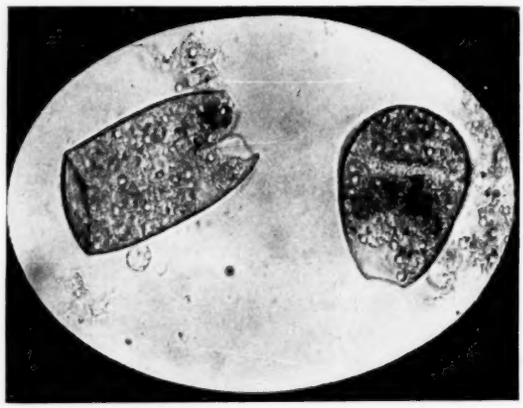

Fig. 6.—Microphotographs of ova. × 190. Showing the various shapes assumed by ova.

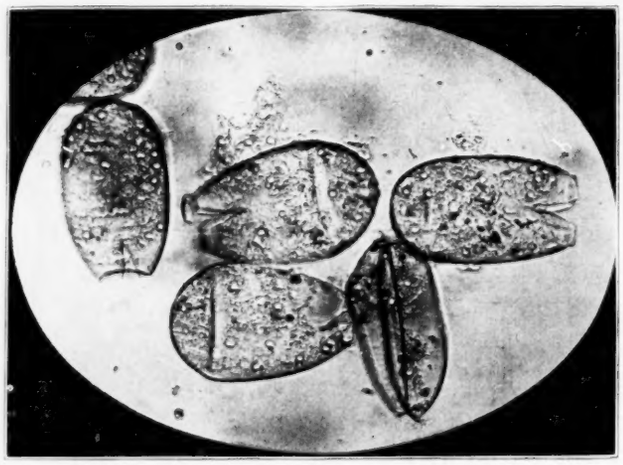

Fig. 7.—Similar to Fig. 6.

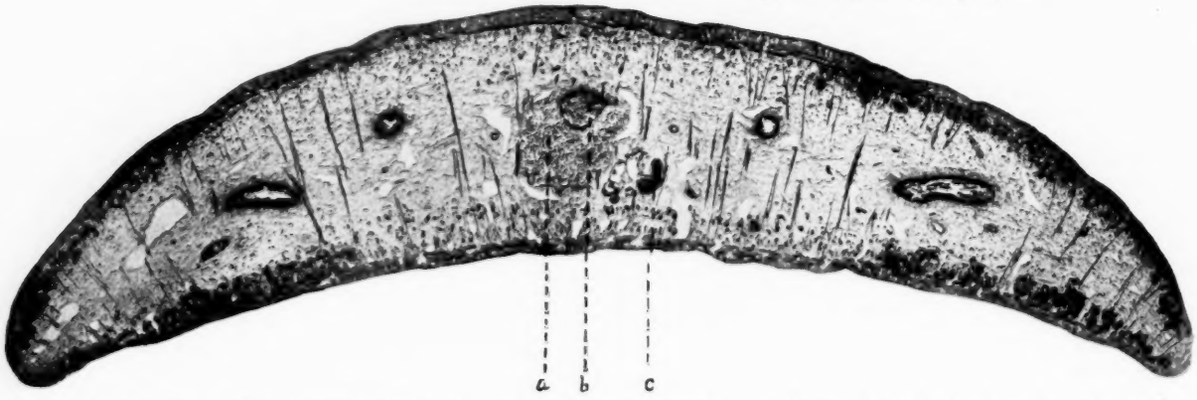

Fig. 4.—Transverse section through middle of worm. (Microphotograph.) a, Ovary; b, shell gland; c, Laurer's canal.

of its rarity and the possibility of having it introduced into our own country.

Classification.—This parasite belongs to the class known as trematodes and is the largest of the distomes hitherto found in man. The infection by any of the trematodes is known as distomatis, though Stiles says that the term distoma has been suppressed.

These trematodes may be found in different parts of the body and are accordingly classed as follows: 1, Ophthalmic; 2, cerebral; 3, pulmonary; 4, hepatic; 5, pancreatic; 6, intestinal; 7, venal, distomatosis.

The parasite we have under consideration is one of three that are found in the intestines of man, viz.: 1, *Fasciolopsis buskii;* 2, *Fasciolopsis rathouisi;* and 3, *Heterophyes heterophyes.* The first and second are found in Asia and the latter in Egypt and Japan.

Busk discovered this fluke in man in 1843, and all of the reported cases heretofore have been from Asia. As Stiles suggests, it is not known whether these trematodes could be distributed in this country or not, as it is known to require particular species of snails to act as intermediate hosts. All of the conditions may be present in this country, and if so, then it would be possible to introduce and spread the parasite here, and consequently its recognition becomes an important matter.

We shall use the generic and specific classification as given by Stiles,[2] which is as follows:

"FAMILY FASCIOLIDÆ—Genus *Fasciolopsis looss*, 1899.

"*Generic Diagnosis.—Fasciolidæ:* Body rather large, flat, about one-third as broad as long, lanceolate to tong-shaped. Cephalic cone wanting. Skin without spines. Ventral acetabulum larger than oral sucker and nearer anterior end. Intestine with short prepharynx, strong globular pharynx, and exceedingly short esophagus; intestinal ceca branch immediately anterior to ventral acetabulum, are narrow and long, extending along inner margin of vitellaria to the posterior end of the body, and are not provided with secondary branches. Excretory system similar to that of *Fasciola.* Genital pores empty into genital sinus, which is situated in the ventro-median line immediately anterior to acetabulum. Copulatory organ present, the cirrus pouch being a long, straight median tube extending caudate to a point about half way between ventral acetabulum and shell gland. Male organs: Testicles in the posterior half of median field, side by side, or one posterior to the other, both branched dicotomously. Female organs: Ovary moderately developed, branched, located at equator, right of median line; receptaculum seminis absent; Laurer's canal present; vitellaria well developed, with very small acini, and extend from plane of ventral acetabulum to caudal pole of body, where the acini from the two sides may meet in the median line; transverse section of body shows acini to be superficial both dorsally and ventrally; transverse vitello-ducts meet in median line of equator to form the vitelline reservoir; shell-gland compact, well developed, globular; uterus extends from equator forward, with lateral coils, and leads to the well-developed metraterm at caudal border of acetabulum. Eggs rather numerous, similar in form to those of *Fasciola.*

"*Habitat.*—Intestine of mammals.

"*Type Species.—Fasciolopsis buskii* (Lankester, 1857).

"BUSK'S INTESTINAL FLUKE—*Fasciolopsis buskii* (Lankester, 1857) STILES, 1901—OF MAN.

"*Specific Diagnosis.*—Fasciolopsis: 24 to 37 mm. (75 mm. after Busk) long, 5.5 to 12 or 14 mm. broad, 1.5 to 2 mm. thick; maximal breadth in equatorial portion; more attenuate anteriorly than posteriorly; ventral surface flat; dorsal surface slightly convex; margins very thin. Oral sucker ventro-subterminal small, 0.5 mm. in diameter, 0.33 mm. deep. Ventral acetabulum 1.6 to 2 mm. in diameter, but elongated caudally directly under the ventral surface in a 2 to 8 mm. long sack; center of acetabulum 1.8 to 2 mm. from anterior end of body. Skin without spines. Prepharynx 0.28 mm. long; pharynx, 0.7 mm.; esophagus very short, bifurcation of the intestine occurs about on anterior plane of acetabulum; ceca with two characteristic curves toward median line, one at equator, the other between the testicles.

"*Male Organs.*—Cirrus pouch cylindrical, median, nearly one-fourth as long as the body, 0.25 to 0.33 mm. thick, straight, extending from genital pore to about midway to shell gland (equator); it contains a long sinous vesicula seminalis with a long blind sack possessing lateral branches, this sack reaching from a short distance caudad of acetabulum to about 0.5 mm. from caudal end of pouch; pars prostatica 0.5 mm. long; ductus ejaculatorious rather short, provided with fine spines; vasa differentia near median line; testicles one posterior to the other; branches of posterior testicle extend to within about 3 mm. of the caudal end of the body. Female organs: Vitelline reservoir rather small; shell gland 1 to 1.5 mm. in diameter. Eggs numerous, 120 to 130 microns long by 77 to 80 microns broad. Sporocyst, redia, cercaria and intermediate host undetermined.

"*Habitat.*—Small intestine of man (*Homo sapiens*); Asia."

Specimen.—The specimen as shown in Figure 1 corresponds in every way to the above description. Before the fluke was placed in the hardening solution it assumed a variety of shapes, assuming almost an oval outline and then straightening out and narrowing itself very much. The movements, while not progressive, were rather active. Figure 3 is from a micro-photograph and corresponds to the section published by Stiles (after Odhner) on page 41 of his monograph.

The Ova.—The ova of this parasite were very numerous. They average 75 by 150 microns. They are oval in outline, are possessed of a double membrane, the two parts placed closely together with only a very narrow clear space between them. The outer wall is the thicker and more distinct. At

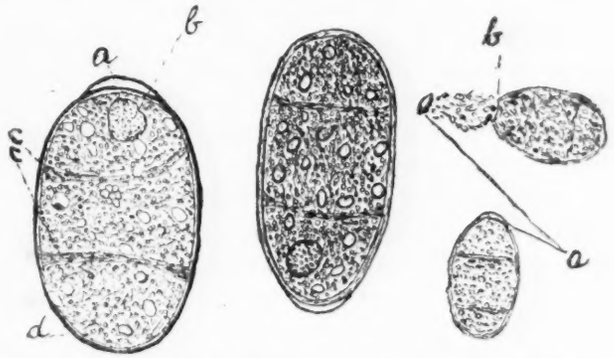

Fig. 5.—Ova of *Fasciolopsis buskii.* Drawings from original observations, showing membranes, transverse lines, and cap. In one the cap is removed and contents are escaping. 75x150 microns. a, cap; b, opening in ovum; c, transverse markings.

one end is a distinct clear cap which by pressure may burst off and allow the contents to escape. Dividing the ovum into three almost equal parts are two transverse lines. We have found no mention of these lines in any of the former descriptions. They were present in all the ova examined except a few from which the contents had escaped. They are shown in Figures 5, 6 and 7. The contents are granular, with some small round clear spaces, and in some near the cap end is a round area about 10 microns in diameter which differs from the rest in appearing to have a very delicate membrane.

Symptoms.—We are unable to say anything of these, as the case was not seen early enough. It is presumed though that persons thus infected must suffer from intestinal irritation, and possibly anemia.

Diagnosis.—The diagnosis is to be made by carefully examining the stools.

Treatment.—The ordinary anthelmintics should be tried.

We take this opportunity to thank Drs. R. C. Cabot and L. S. Brown of Harvard Medical School for the most excellent micro-photographs which are used to illustrate this paper.

Correction in Yellow Fever Article.—In the article on yellow fever in THE JOURNAL September 23, page 916, line 20, is a typographical error. The sentence should read "The described cells have only *once* been found after the third day," etc. We call attention to the error as it alters the meaning.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 30, 1905.

EXPERIMENTAL RESEARCHES ON CANCER.

Recently we commented on the report on the statistical investigations of cancer of the Imperial Cancer Research Fund of Great Britain. There has appeared since Part II of the same report, dealing with the growth of cancer under natural and experimental conditions. This report is of great importance, particularly because of the emphasis it places on the significance of experimental researches on malignant growths. It gives an extensive account of the excellent work done by Drs. Bashford, Murray and Cramer on transplantation of cancer in various animals and summarizes and criticizes, in the light of experimental facts, the various hypotheses concerning the nature and origin of these growths.

It is significant that of all the various animals inoculated with tumors from the same species success was obtained only with the mouse. In 8,000 transplantations in mice, success varied from 1.5 to 50 per cent. In over 900 inoculations made with tumors of other animals, including dogs, rats, horses, carp, etc., not one successful result was obtained, and never were they able to transplant a tumor from one animal to any other animal of a different species, though sporadic tumors of an identical nature may be found in both species. Even in mice it was found that the percentage of successful transplantations was largely dependent on the variety of mice used. A tumor, for instance, in an English mouse inoculated into English mice of exactly the same variety would give a much higher percentage of successes than if inoculated into German mice of a slightly different variety. The same fact was noted for wild and tame mice. These facts indicate clearly the specificity of the process and are exactly comparable to the specific precipitin reactions, and perhaps even more delicate.

Attention is called to the fact that malignant growths in mice are in every way comparable to those found in human beings and behave with reference to growth, metastatic formation and other properties under artificial propagation exactly as do these growths naturally. General recognition should be given to this fact, and it should be recognized also that all the problems of cancer may be made the subject of experimental study.

In the transplanted tumors, the stroma and vascular structures introduced disintegrate and are replaced by stroma from the animal inoculated, retaining, however, the arraugement which occurred in the sporadic growth. The stroma, therefore, may be considered as a specific reaction on the part of the host and is comparable to the granulation tissue in the granulomas, being less marked only. The parenchyma, on the other hand, does not change, but goes on proliferating. If we were to carry the analogy between infections and new growths further, we might look on the tumor cells themselves as the infecting agents, comparable, for instance, to the tubercle organisms in tuberculosis, capable of indefinite proliferation when successfully transplanted and following certain definite laws of growth as any other organism does. We should look, therefore, for the explanation of the growth of tumor cells along the same lines as that of the growth of any other cell. This view is very different from the infectious hypothesis, in which it is assumed that some unknown organism is present either inside or outside the cell and stimulates its growth.

All the various hypotheses advanced to explain the origin and growth of cancer are inadequate, according to the report. Particularly do they fail in explaining the facts observed in experimental study, as most of them were advanced before it was known that cancer could be subjected to such study. The infectious theory is made the subject of particular comment, and the facts in general tend to speak against the view of cancer being an infectious disease in the sense in which the term is applied either to those diseases in which the germ is known or in those in which the organism has not yet been discovered. The apparent endemics of cancer have been explained away by properly considering the age incidence of the disease. There is absolutely no evidence derived from either animals or man that the disease is naturally communicable. The cell inclusions found in cancer have been made the subject of critical study by many pathologists, and the general trend of opinion appears to be against the view that they are specific parasites. Again, cancer is common to all vertebrates and produces identical histologic lesions in all the various species, yet the disease can not be transplanted from one species to another. This is in marked contrast to infectious diseases in man and animals. Cancer cells when transplanted continue to grow and do not degenerate as does infective granulomatous tissue when similarly transplanted. The cells arising in transplanted tumors are direct descendants of the original tumor cells and are entirely independent of the host. These are some of what appear to be vital objections to the parasitic hypothesis.

The results obtained by the application of radium emanations to tumors in mice agree with those reported by other investigators. In general there was a diminution in size after a few exposures to radium or the injection of radioactive salt solution, though this did not occur in all. Careful histologic examination revealed the fact that extensive hemorrhages occurred in the tumor thus treated, followed by connective tissue pro-

liferation and shrinkage. They found that adrenalin in large dose produced similar hemorrhages and also led to the same favorable result. The conclusion is reached, therefore, that in these processes just mentioned, as also in instances where spontaneous healing occurs, the occurrence of hemorrhage is the preliminary condition, and the connective tissue proliferation is thus initiated.

The general result of the investigation may be summed up by stating that the explanation of the nature of cancer centers around the explanation of the power of continuous proliferation and the question of whether this growth is analyzable or not. A study of the process of growth is paramount, therefore, to all other problems, and this brings the experimental method naturally in the forefront of all other methods.

It is certainly very gratifying to read this report and to note on what broad and comprehensive lines these investigations are conducted. As a result of this study, while the nature of cancer may remain as obscure as before, yet the significance of many phases of the question certainly can be much better appreciated and one is enabled more clearly to determine the vital points of attack in the solution of this most difficult and serious problem.

PHYSICAL CONDITION OF SCHOOL CHILDREN.

Every autumn, at the beginning of the school year, it seems advisable to call attention to the fact that one of the most important features of success in school work is that the child shall be in normal health. Without this qualification it is absurd to expect the child to succeed in its studies like normal children, or even that it shall do itself justice in the trying process of the development of its faculties. If there were any need for emphasizing this point, the recent report of the Department of Health of New York with regard to the physical condition of school children in a number of metropolitan schools would furnish it amply. Altogether, 13,941 children have been examined. Of these, 6,294 were reported by the medical school inspectors as requiring medical attention. One thousand and ninety-two children were reported as poorly nourished; that is, as being in such a poor state of nutrition from lack of food as to require special care on this score. A number of the settlement workers in the slums of various American cities have recently reported that they found not a few school children in regular attendance at school who did not have breakfast before leaving home. It is, as being in such a poor state of nutrition from lack that the physicians report one out of every fourteen children as insufficiently nourished.

These figures are surely startling enough to arouse all our municipal health and educational authorities to the necessity for greater care of the physical condition of school children, but they are not all. It was found, for instance, that 3,219 children were suffering from defective vision, and that 460 children had defective hearing. Almost needless to say, children laboring from notable defects of the most important faculties used in modern educational methods, can not be expected to keep up with other children. Many of the children set down by teachers as dull were found to be suffering from either a defect of vision or of hearing, for the correction of which nothing had been done. In addition to these, 1,623 children suffered from breathing defects that frankly put them in the class of mouth-breathers. The intellectual development of the mouth-breather, as a rule, is so much retarded by this physical abnormality that it is not surprising to find that most of these children also were considered to be dull. They will continue to be backward until relieved of their serious respiratory handicap.

The examinations as made in New York seem to have been carefully carried out, and with sufficient attention to detail to make the report valuable for general statistical purposes. While the school children examined all came from the poorer districts of the city, care was taken to avoid the worst quarters, in which the mortality and morbidity rate is highest, so that the results obtained might be of average value for comparative purposes. The result, then, startling as it is, is a statement of actual conditions and not a chance statistical exaggeration. The figures we have quoted, however, point out only the educational disadvantages. There are some other details of the report of special interest to physicians. For instance, it was found that over 2,300 children were suffering from enlargements of the cervical glands. Most of these cases are doubtless tuberculous in nature. Now that we have learned how much can be accomplished by out-door air and good nutrition, in such forms of tuberculosis as enlarged glands, it seems important that these children should not be allowed to develop this disease to the extent that will make them foci of infection in the crowded neighborhoods in which they live. In other words, this careful examination of school children has given valuable material not only for the educator, but also for all those who are interested in the great work of the prevention of disease, and no more promising field for progress in the prophylaxis of disease has been opened in recent years.

THE PNEUMOCOCCUS IN HEALTH AND DISEASE.

When Sternberg, in the eighties of last century, discovered that the pneumococcus was present in the mouths of a large percentage of healthy individuals, there resulted great modifications in our conception of the pathogenesis of acute lobar pneumonia. Many had come to regard lobar pneumonia as an auto-infection, conceiving that the parasite was constantly lying in wait in the saliva of the normal individual, biding its time until undue exposure, alcoholism, or some other depressant factor had lessened the resistance sufficiently to allow it to gain a foothold in the lungs. There is little

doubt that this conception, simple and attractive as it was, took too little account of other factors, especially of the factor of contagion, which the experience of large cities has tended to bring to the fore.

The first report of the Medical Commission for the Investigation of Acute Respiratory Diseases,[1] while it takes up only the bacteriologic aspects of pneumonia, brings out many points which have a bearing on the means by which the disease is transmitted. The report shows, first of all, that the broad statement that pneumococci are found in the mouths of a large percentage of healthy individuals must be modified in certain particulars. While it is probably true that a small number of people always harbor virulent pneumococci, the mass of individuals only do so from time to time. In the eastern and middle western states, where the conditions of living during the winter months are distinctly modified by severe climate, it is mostly during the cold weather that a large percentage of individuals are so infected. During the spring and fall the number harboring pneumococci is very much smaller. This would seem to indicate that the altered conditions during the cold season facilitate the spread of pneumococci to a very appreciable extent. This fact accounts for the increased incidence of pneumonia during the winter months, not only because it shows increased facility for the transmission of the germ, but also because it allows of alterations in its virulence, for there is good reason to believe, on experimental grounds, that passage of the pneumococcus through human beings increases this. The report of the commission further suggests some of the means by which pneumococci are spread. They may be acquired in hospital wards, for patients in the immediate neighborhood of pneumonia cases whose saliva was originally free from pneumococci may subsequently develop them. They may be acquired under such circumstances by droplet infection, by means of dried pneumonic sputum, or by actual contact with utensils which have been used by pneumonia patients. The latter, like typhoid patients, may carry the germs of the disease for weeks or even months after recovery from the disease, and may thus remain a source of danger to others for an indefinite period. There is some evidence brought forward by the commission that others than pneumonia patients may be a source of danger, for they show that in some instances ordinary colds may, of course, transmit the germ. The prevalence of the disease in insanitary and overcrowded districts is to some extent explained by the facts above cited, and also by the further observation that in dried sputum, especially in dark places or those not exposed to direct sunlight, the pneumococci may remain alive for a month or even longer.

Apart from these facts with clinical bearing, the purely bacteriologic side of the question has been enriched by the studies made under the commission. It is shown that there is quite an important group of organisms intermediate between the pneumococci and the streptococci, and, though the clinical significance of these organisms is only beginning to be worked out, there is evidence that they are pathogenic and may be found both in pneumonia and in distant foci of inflammation, such as meningitis. The report of the commission shows that a high class of work is being accomplished under their auspices, and encourages the belief that when that work is concluded we shall be in possession of a considerable mass of new facts regarding pneumonia, and shall be in a position to understand more clearly, and combat more intelligently a disease which, in some places at any rate, is rapidly usurping the premier rôle of tuberculosis as a factor in mortality.

1. Journal of Experimental Medicine, vol. vii, No. 5.

AMERICAN MEDICAL COLLEGES.

It is unnecessary nowadays for the American medical student to go to Europe to finish his medical education. Once it was, but not now. This is the sentiment of a short article by Dr. Nicholas Senn in the current number of *Collier's Weekly*. He calls attention to the fact that during the war of independence our surgeons carried with them text-books written by surgeons of the opposing army. Now, however, "our medical schools have gradually raised the requirements of admission, lengthened the time of college attendance, equipped laboratories, secured adequate clinical facilities, and initiated a vigorous final examination, until some of our leading schools, like the Harvard Medical School, the College of Physicians and Surgeons of New York, the University of Pennsylvania, the Johns Hopkins Medical School, and Rush Medical College, Chicago, compare well with any of the European schools. Fortunately, the elective system in teaching, so common in Europe, has found but little favor in this country. It can be safely stated that didactic teaching by lectures, recitations, demonstrations, and laboratory work is carried on in a more thorough and systematic manner in this country than anywhere else. We have hospitals for clinical teaching in our large cities which in the near future are destined to overshadow the famous clinical institutions of the Old World. Our students waste no time in beer gardens and the field of honor. They come to our medical schools with a firm determination to master the principles and practice of their chosen profession as thoroughly as possible during their pupilage, and apply themselves to the task with zeal and devotion. The numerous hospitals that are springing up in all of our large cities secure for a good percentage of our graduates appointments as internes, where they are given the best possible advantages for a successful postgraduate practical training. There is no longer any need for our students to cross the Atlantic for the purpose of studying medicine. A comparison between an equal number of recent graduates from our high-requirement medical schools and those of Europe would unquestionably result in favor of the former." All of us are decrying conditions as they relate to medical education in this country, but compared with what they have been, we ought to rejoice. There are still too

many commercial schools with low entrance requirements, with mediocre teachers, with no facilities for teaching as modern medicine must be taught, and which, consequently, graduate young men and women who are totally unprepared for their life work; yet even these schools are better than they were, and—there are fewer of them. So, while matters are far from what they should be, they are better than they were—and they are getting better. Senn is right, "In less than half a century our great cities will become to the medical profession of every country what Alexandria, Athens, Bologna, Pisa, Paris, London, Edinburgh, Vienna and Berlin have been in the past and present."

IMPOSING ON PHYSICIANS' PRIVILEGES.

It is said that in Chicago the number of scorching automobiles using the red cross—which should mean that they are driven by physicians or hospital representatives—has increased so greatly of late that the police are suspicious that speed fiends are sailing under false colors. Considering that people with all sorts of moral qualifications (or lack of them) are driving automobiles, this is not impossible. Moreover, the blunting of conscience which makes so many otherwise respectable men wilfully violate the well-known ordinances as to speed, as well as the God-given rights of others, might lead to the temptation thus to evade the law. In any case, however, it is a matter that concerns physicians, and they should do all that is practicable to prevent such misrepresentation. The necessity for physicians to travel at extra speed through crowded thoroughfares does not occur often, and if in emergencies they are allowed the privilege, they should use it with due discretion. It would be a slur on the profession to say that its members can not resist the automobile mania or speed intoxication infection.

THE NEED OF PHYSICIANS AND SANITARIANS IN THE CHICAGO CHARTER CONVENTION.

Owing to its rapid growth, the city of Chicago long ago outgrew the provisions of its present charter, and at the last meeting of the legislature measures were adopted calling together a convention to draft a new, adequate charter for the city. In other words, steps have been taken to give Chicago a better form of government than it has at present, a government more in harmony with the needs of the city and with the ideals of the present day. The membership of this charter convention seems to have been determined and, unfortunately, as it now stands, there is not included therein the name of a single physician, or, so far as we can judge, of a scientifically trained sanitarian. This means that in considering the provisions in the new governmental organization for the sanitation, for the hospitals and other institutions of medical and hygienic nature of the new and improved Chicago, the charter convention must seek expert advice outside its own membership. While practically all other departments of municipal activity appear to be adequately represented in this convention, that of public health, now of such far-reaching possibilities for good if properly organized and administered, seems to have been overlooked entirely. If this be the case it certainly reflects little credit on the foresight of the public officials and bodies whose duty it was to select the members of the convention. It shows that after all there is still a lamentable ignorance in the community of the importance of public health in all its various branches. We hope some way may be found to remedy this serious defect in the charter convention as it now is composed; for without membership in the convention it becomes exceedingly difficult for medical men and expert hygienists to secure for public health the consideration it should have in the fundamental organization of the government of a city like Chicago.

THE SURGICAL TREATMENT OF TUBERCULOUS CERVICAL LYMPH GLANDS.

Although recovery from tuberculosis, wherever situated, occurs not rarely, such a result, of course, is not always to be expected. When the disease is not accessible to surgical intervention the best results will be obtained from an intelligent combination of fresh air, a generous diet and a proper adjustment of rest and exercise. On the other hand, surgical measures should be instituted when the disease is within reach. These remarks are applicable especially to tuberculosis of the lymphatic glands in the neck. Apart from the local disturbance, there is here also the danger of the conveyance of the disease to remote parts through the blood stream. Admirable results have been reported from various sources from extirpation of such tuberculous glands, the prognosis being more favorable in children than in adults. To the statistics already published may be added those recently presented by Dr. Charles N. Dowd,[1] who records the results of operation by thorough removal of the affected glands with a minimum disturbance of the surrounding tissues in 100 cases, principally in children. In his opinion, tuberculosis of the cervical lymph nodes in the large majority of cases is due apparently to infection introduced by way of the fauces, the pharynx or the nasal mucous membrane—in 86 per cent. of the cases under his own observation. Statistics show that extension to the lungs and other internal organs takes place in from one-quarter to one-half of the cases in which removal of the nodes is not undertaken. Apart from the tendency to infect other structures, the disease is tedious and a source of great discomfort and disability, and it leaves behind it disfiguring scars. Thorough removal of the diseased nodes by operation has yielded better results than any other treatment that has been thus far employed. In favorable cases the operation is entirely safe, leaving a scar that is scarcely visible. The patient will be confined to bed probably for two or three days and will be required to wear a bandage or dressing for from one and a half to three weeks. There is freedom from recurrence in about 75 per cent. and ultimate recovery in about 90 per cent. of the cases. In less favorable cases, also, the operation is safe, while the disfigurement from scars is less than that resulting from discharging sinuses. There is freedom from recurrence in from 50

1. Annals of Surgery, 1905, p. 49.

to 55 per cent. and ultimate cure in from 70 to 75 per cent. of cases. The preferable incisions are transverse, either in the creases of the neck or parallel to them; they should avoid the facial nerve. A vertical incision behind the hair line is occasionally helpful. Extensive incisions are necessary in advanced cases. Every precaution should be taken to preserve the normal structures of the neck. It is not feasible to divide the cases into groups of those suitable and others unsuitable for operation. Every patient with tuberculous cervical lymph nodes should be operated on unless the operation is positively contraindicated.

A RUSSIAN NOVELIST'S VIEWS.

The distinguished Russian novelist, Maxim Gorky, whose fame has been made worldwide by his association with late events in Russia, has recently published some personal recollections of his brother novelist, Chekhov, who is also a Russian. In this work, very definite opinions with regard to the present state of the professions in Russia and apparently also in most of the rest of what these novelists are prone to think of as the over-civilized world, are pointedly expressed. Chekhov once said to Gorky, who evidently thoroughly agreed with him, "To live well, worthy of a human being, one must labor. Work, lovingly, faithfully done, is our highest privilege—with us, no one is able to do this. An architect sits down to the card table or spends his time in the wings of the theater as soon as he has succeeded in constructing two or three decent houses. A physician, as soon as he has succeeded in building up a lucrative practice for himself, loses all interest in science and never reads anything aside from the 'Notes on Therapeutics.' At forty, he is earnestly convinced that all diseases emanate from congestions and the taking of colds." This might seem rather severe on the medical profession of his native land; but his compliments to the other professions are no more favorable. "A lawyer," he says, "after he once makes a name for himself in a successfully conducted lawsuit does not trouble himself any longer with defending just causes, he takes up the defense of rich corporations, plays the races, eats oysters, and represents himself as a connoisseur in the fine arts. An actor, after rendering a few decent rôles, is likely to refuse to study further parts, dons a cylinder hat and proclaims himself a genius." At least, it is interesting to see the reflection that professional men cast in the somewhat distorted mirror of these Russian novelists' limited experience, but even from such one-sided views perhaps good may be derived, for the gift to see ourselves as others see us is too precious ever to be refused.

Medical News

ALABAMA.

Personal.—Dr. S. G. Robinson, Eufaula, is seriously ill with cerebral hemorrhage.

Bequests.—By the will of the late Dr. Joseph Riley Smith, Birmingham, Hillman Hospital and St. Vincent Hospital each received $5,000, to be paid in annual installments of $1,000 each.

Hospital Reopened.—The City Hospital at Huntsville was reopened September 8 after having been closed for several weeks for repairs. About $3,000 has been expended in remodeling and refitting the institution.

Itinerant Doctor Arrested.—"Dr." Hass, who has been selling "Shaker" medicines in Huntsville, was arrested September 9 for failure to pay license. The charge against him was dismissed when he agreed to pay the regular itinerant's license.

ARIZONA.

Board of Health for Bisbee.—The City Council of Bisbee has passed and put in force an ordinance creating a city board of health and prescribing its duties.

Personal.—Dr. H. Wilson Levengood, Mesa, is acting as U. S. G. S. surgeon at Roosevelt during the vacation of Dr. L. J. Palmer.——Dr. Allen R. Hickman of Copper Queen Hospital, Bisbee, is seriously ill at Douglas.——Dr. Charles H. Jones, Tempe, was thrown from a buggy at Mesa and sustained severe contusions.

ARKANSAS.

Sentenced to Prison.—Dr. B. H. Ward, Mount Pisgah, was found guilty at Searcy of unlawful conduct with a girl under the age of 16, and was sentenced to imprisonment for one year in the penitentiary. An appeal was asked and granted.

Personal.—Dr. Charles G. Carroll will succeed Prof. A. M. Muckenfuss as professor of chemistry in the University of Arkansas, Little Rock.——Dr. Myron E. Lane, Little Rock, has left for Europe.——Dr. William W. Jackson, Jonesboro, has resigned as a member of the State Board of Health.——Dr. and Mrs. Anderson Watkins, Little Rock, have returned from the East.——Dr. William H. Barry, president of the Federal Board, Hot Springs, who has been seriously ill, is rapidly regaining his strength.

CALIFORNIA.

Ill and Injured.—Dr. Gardner P. Pond, Fair Oaks, was thrown from his carriage in a collision September 4, had two of his ribs broken, suffered a concussion of the brain, and is in a precarious condition.——Dr. George B. Nichols, San Luis Obispo, is critically ill with cancer.

Frowns on Lodge Practice.—The Fresno County Medical Society, at its meeting September 5, adopted the following resolution regarding lodge or contract practice:

Resolved, That it is the sense of this society that it is a violation of the ethics of the medical profession and against the best interests of the same, for any member of the profession to contract to do lodge or other contract practice, where the compensation is a stated sum per capita.

New Hospitals.—The Santa Fe Hospital at Los Angeles will be completed and ready to receive patients by the end of this month. The building when finished will have cost more than $200,000.——Preparations are being made for the construction of the new Clara Barton Hospital, San Francisco, which will be erected on Post Street, will accommodate eighty patients and will cost about $130,000.

Personal.—Dr. Clarence V. Thompson, radiologist at the City and County Hospital, San Francisco, has resigned.——Dr. W. Kearney, San Francisco, has been appointed volunteer medical inspector of schools.——Dr. Carroll Thrasher, San Francisco, returned from Alaska September 7.——Dr. and Mrs. John Gallwey, San Francisco, have returned from an extensive trip abroad.——Dr. James M. Steade has been appointed a member of the board of health of San Diego, vice Dr. Peter C. Remondino.——Dr. August F. Browne, Healdsburg, has given up the practice of medicine and returned to his former employment as train dispatcher for the Southern Pacific Railway in San Francisco.——Dr. Frederick W. Browning, Haywards, has returned from a trip to the East.

CONNECTICUT.

Hospital Staff Elected.—St. Vincent Hospital, Bridgeport, announces the following visiting staff: Dr. Charles C. Godfrey, surgery; Dr. Edward Fitzgerald, medicine; Dr. Henry S. Miles, ophthalmology, and Dr. Herbert E. Smyth, laryngology.

Violator of the Law.—Dr. James L. Gardner Central Village, arrested on the charge of issuing a prescription for liquor in violation of the law, pleaded guilty August 30 and was fined $20 and costs. The evidence showed that Dr. Gardner had issued twenty-one prescriptions in one month to one couple for liquor.

New Hospitals.—A site has been selected and purchased at Derby for the City Hospital, for the erection of which the late George Griffin devised the sum of $50,000.——The Cedar Mountain Hospital for tuberculosis patients, which has been closed for about two years, will reopen October 1. The state

has appropriated $7,500 toward the support of the hospital and about $4,000 still remains to be raised. The hospital will accommodate, when completed, eighty-eight patients.

August Deaths.—During August, 1,419 deaths were reported to the State Board of Health. This was 241 less than in July, 47 more than in August, 1904, and 4 less than the average number of deaths for the five preceding years. The death rate for the month was equivalent to an annual mortality of 17.1 per 1,000. Among the principal causes of death were: Infantile diarrhea, 293; nervous diseases, 143; consumption, 95; heart diseases, 92; accidents and violence, 78; pneumonia, 39, and typhoid fever, 26.

Typhoid Prevalence.—An unusual prevalence of typhoid fever existed during August, 259 cases being reported, as against 173 in the corresponding month of last year. The disease is widely scattered, being reported from fifty different towns. The epidemic character of the outbreak was evidenced by the suddenness of its onset and its limited duration. ——An epidemic of typhoid has broken out among the inmates of the Springside Home, New Haven, where 13 cases have occurred. Up to the present time the source of the epidemic has not been discovered.

Personal.—Dr. W. G. Verdi, Bridgeport, has been appointed a member of the house staff of the St. Vincent Hospital.—— The house of Dr. John L. Buel, Litchfield, was entered August 27 and a large amount of silverware was stolen.——Dr. Joseph Swett, Jr., New Hartford, medical examiner for New Hartford and Barkhamsted, in a collision between his buggy and a fast train at New Hartford September 12, was thrown thirty feet, but escaped without serious injury. His horse was killed.—— Drs. Thomas M. Bull, William J. Delaney, Walter A. Reilly and A. E. May have been appointed inspectors of the public schools of Naugatuck.

ILLINOIS.

Diphtheria Closes Schools.—Malignant diphtheria in and around Farmington and in Green Township, Livingston County, has caused the public schools to be closed.

Subscriptions for Hospital.—It was announced at the annual conference September 19 that $20,000 has been subscribed toward the purchase of ground and for a maintenance fund for the Deaconess Hospital, Peoria.

Medical Venders Fined.—"Drs." J. B. Grubbs, L. Thomas and Charles B. Smith, charged with practicing medicine in Springfield without a license and prosecuted at the instance of the State Board of Health, were each fined $200 and costs. The defendants defaulted.

Bomb Sent Physician.—Dr. Orin C. Lamb, South Chicago, had pushed into his office, through an open door, a cigar box containing a stick of dynamite, a battery and percussion cap. Dr. Lamb considers it possible that this infernal machine was sent by a former disgruntled patient.

Sanitarium Dedicated.—The Hinsdale Sanitarium—the suburban quarters of the Lifeboat Work of Chicago—was dedicated September 20. Addresses were made by the Hon. Orrin N. Carter, Drs. James H. Kellogg, D. K. Pearsons, Homer E. Thomas, L. P. Haskell and David Paulson.

Personal.—Dr. George E. Hilgard, Bellville, captain and assistant surgeon Illinois National Guard, assigned Fifth Infantry, has resigned.——Dr. James H. Mosler, Prophetstown, injured his finger in the machinery of a windmill September 14. —Dr. and Mrs. Talbot B. Strauss, Gibson City, have gone to Denver.

County Hospital Examinations.—The members of the consulting staff of Cook County Hospital met in joint session September 19 with the Cook County Civil Service Commission to consider questions relating to the announced examination of candidates for the hospital staff. The examining board is composed as follows: Drs. Charles S. Bacon, Frank Billings, Daniel R. Brower, Heman H. Brown, Sanger Brown, Thomas J. Conley, A. C. Cowperthwaite, Nathan S. Davis, Joseph B. DeLee, Fernand Henrotin, Ferdinand C. Hotz, Stuart Johnstone, John B. Murphy, Hugh T. Patrick, Charles E. Paddock, William E. Quine, Edgar M. Reading, Nicholas Senn, George F. Shears, Horace M. Starkey, Daniel A. K. Steele, James H. Stowell, Henry S. Tucker, Charles S. Williams and Casey A. Wood. Dr. Fernand Henrotin was elected chairman of the board and Dr. Joseph B. DeLee secretary. An executive committee, which will later name the membership of the subboards for each of the twelve departments, was appointed and composed as follows: Dr. William E. Quine, chairman; Drs. John B. Murphy, Hugh T. Patrick, Joseph B. De Lee, Casey A. Wood, George F. Shears, E. M. Reading. Dr. Fernand Henrotin is a member of the committee ex-officio and Dr. De Lee was selected secretary. The executive committee will make further arrangements for the tests of candidates. Original entrance examinations must be held for the places, according to the amendment passed at the last session of the state legislature. Those who pass will be placed on the eligible list. Examinations will be held in the following branches: Surgery, medicine, nervous and mental diseases, diseases of children and contagious diseases, pathology, obstetrics, skin and venereal diseases, diseases of the eye, diseases of the ear, nose and throat, orthopedic surgery, pathologic chemistry and *x*-ray.

Chicago.

Personal.—Dr. and Mrs. Robert C. Wilson have returned from Europe.——Dr. Horace M. Starkey has moved to Rockford.

Banquet to Dr. Senn.—The medical profession of the city will give a banquet to Dr. Nicholas Senn Saturday, November 11. The committee of arrangements consists of Drs. William A. Evans, Frank Billings, John B. Murphy, William L. Baum and David J. Doherty.

More Smallpox.—Just after the Isolation Hospital had discharged its last smallpox patient three new cases of the disease were discovered; two of the patients were removed to the Isolation Hospital, but the third, when found, was dead from the hemorrhagic form of the disease.

Deaths of the Week.—The total deaths from all causes during the week ended September 23 numbered 512, an equivalent to an annual death rate of 13.4 per 1,000. One hundred and ninety-six of the deaths were of individuals between 20 and 60 years; 144 of infants under one year, and 82 of persons over 60. Acute intestinal diseases caused 114 deaths; consumption, 51; heart diseases, 47; violence, including suicide, 41; Bright's disease, 30; and pneumonia and nervous diseases, each 24.

INDIANA.

Dr. Brayton Returns from Yellow Fever Study.—Dr. Nelson D. Brayton has returned to Indianapolis. He has been in New Orleans for some time studying yellow fever.

Will Not Divert Hospital Fund.—At the Methodist conference in Michigan City September 16, the conference refused to divert to other channels a fund of $6,000 bequeathed to the council by Mrs. Martha Ray of Lafayette, to be used in the erection of a hospital.

Sentenced for Criminal Malpractice.—Dr. Charles L. Landfair, Bluffton, has been found guilty of having performed a criminal operation on Miss Frances Beeler and was sentenced September 18 to imprisonment in the Northern Indiana penitentiary for an indefinite period, and in addition was fined $100 and costs.

Forecast.—The State Board of Health believes that September will show a large increase in typhoid fever over August and that there will be still a larger increase in October. This prediction is made on the fact that this state of affairs prevails every year. Pneumonia and influenza deaths will begin to increase in October, or as soon as the good weather is over and people commence to live indoors.

Personal.—Dr. Joseph R. Mountain, Connersville, while driving across a railway track, collided with a freight train, but escaped in time to save his life. He was dragged a short distance, sustaining a severe sprain of the shoulder.——Dr. Madge P. Hawkins, Terre Haute, has returned from a trip through the West.——Dr. John T. Freeland, Bedford, was taken to Terre Haute September 12 for operation.——Dr. David C. Peyton, Jeffersonville, has been appointed surgeon-in-chief for the Louisville & Southern Indiana Traction Company, the United Gas and Electric Company, and the New Albany water works.——Dr. Carroll C. Cotton, Elwood, seriously injured three of his fingers by the shutting of a car door at Goldsmith September 13.——Dr. Charles L. Seitz, Evansville, has returned after two years in the Arctic regions with the Zeigler-Fiala expedition.——Dr. Albert J. Maris, Waterloo, has been appointed superintendent of a sanitarium in St. Louis.

August Disease and Death.—There was an increase in sickness and an increase in deaths in August, as compared with July, but no increase over August, 1904. Diarrhea was the most prevalent disease, and typhoid fever, which was seventh in July, arose to second place in August. There was a great deal of rheumatism, cholera morbus, cholera infantum and dysentery. Only 10 cases of smallpox were reported from five counties, and no deaths. In the corresponding month last year there were 56 cases of smallpox in 14 counties, and 3 deaths. Typhoid fever prevailed in August in every county in the state and 125 deaths occurred. Very many cases diagnosed

"malaria," "chills," "debility," "slight fever," are found to be typhoid by microscopical tests. The deaths numbered 3,070, equivalent to an annual rate of 13.6 per 1,000. In the corresponding month of last year there were 2,980 deaths. By important ages the deaths were: 665 under 1 year of age; 287, 1 to 5; 53, 5 to 10; 55, 10 to 15; 90, 15 to 20; 735, 65 and over. Tuberculosis caused 340 deaths; diphtheria, 12; scarlet fever, 6; whooping cough, 15; pneumonia, 61; diarrheal diseases, 478; cerebrospinal meningitis, 56; influenza, 1; puerperal fever, 8; cancer, 126, and violence, 190. Of the deaths by violence 7 were homicides, 34 were suicides and the remainder accidental, of whom 27 were drowned, 11 shot and 5 killed by horses.

IOWA.

New Hospital Opened.—The new City Hospital at Shenandoah was formally opened September 10.

College Opens.—The Keokuk Medical College of Physicians and Surgeons was formally opened for the year's work September 12. The address of the evening was delivered by Dr. Frank P. Norbury, Jacksonville, Ill., who sketched the history of medicine as shown in the lives of great physicians.

Personal.—Dr. James Taggart Priestley, Des Moines, has returned from a trip to Japan.——Dr. Albert P. Johnson, Sigourney, was seriously injured in a railroad wreck near Rock Island, Ill., September 4.——Dr. B. L. Sheldon, Cedar Rapids, sails September 30 for Vienna.——Dr. James F. Batten, Onawa, has been appointed coroner of Monona County.

Itinerant Practitioners.—Judge Cesewell, Marshalltown, has ruled that the traveling medicine men, calling themselves "Phenomenal Kraus" and "The Great Anselme," charged with practicing medicine without a license, must furnish a bond of $600 on each of four indictments. The defendants claim that they not only have itinerant licenses, but that the diagnosticians in their employ are physicians duly registered.——A warrant has been sworn out by Dr. A. C. Moerke, Burlington, the local member of the State Board of Health, against the "Minnesota Boy Healer" on the ground that he is engaged in the irregular practice of medicine.——"Brother Paul," an itinerant medicine man, who suddenly left Freeport, Ill., under indictment on fourteen charges, has as suddenly left Burlington, as he was threatened with prosecution by the State Board of Medical Examiners.——The "Great Paul," alias J. Ferdon, was arrested at Fort Madison for practicing without a license, complaint being made by Dr. Carl W. Wahrer, local health officer. Hs is now in jail. This is the same individual who was mentioned in THE JOURNAL of September 9.

KENTUCKY.

Pest House Empty.—The St. John's Eruptive Hospital, Louisville, has been without an occupant for two months.

Diphtheria.—About 50 cases of diphtheria are reported in Franklin County and the public school at Grassy Springs has been closed on account of the disease.

Personal.—Dr. Joseph M. Ferguson, second assistant physician at the Western Kentucky Hospital for the Insane, Hopkinsville, is seriously ill with appendicitis.——Dr. and Mrs. James B. Bullitt and family, Louisville, have returned after a two months' visit to California.——Dr. William A. Briggs, Bowling Green, who has been seriously ill with typhoid fever, has recovered.

Low Death Rate.—The annual report of the health officer of Louisville shows that the death rate for the last fiscal year was 16.79 per 1,000. The chief causes of death were: Tuberculosis, 541; pneumonia, 363; heart diseases, 305; inanition, 207; cancer, 133; nephritis, 160; enterocolitis, 115; typhoid fever, 113; apoplexy, 148; meningitis, 117; paralysis, 105, and bronchitis, 112.

Diphtheria Prevalent.—On account of the prevalence of diphtheria in Franklin County the street fair which was to have been held this month has been postponed. Dr. Arthur T. McCormack, secretary of the State Board of Health, went to Frankfort on September 15 to consult with the local health officers regarding the diphtheria situation. There are said to be 300 cases of the disease in the county.

MARYLAND.

Meeting of Faculty.—About 75 physicians attended the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, held at Deer Park, last week.

New Quarantine Boat.—The board of estimates has appropriated $15,000 for the purchase of a new boat for the quarantine station, as the old one leaked badly. Dr. Sidney P. Heiskell, quarantine officer, has the offer of a wooden boat from New York, and the board agreed to the purchase of that and made an additional appropriation of $2,000 for necessary alterations.

Personal.—Dr. Lewellys F. Barker arrived at Baltimore September 22 after a summer on Go Home Bay, Canada.——Dr. William Whitridge, Baltimore, is at Lucerne, Switzerland.——Dr. William H. Smith, formerly resident physician at the Hebrew Hospital, Baltimore, is in Vienna.——Dr. and Mrs. Benjamin Rush Ridgely, Warren, Baltimore County, celebrated their golden wedding anniversary September 20.

NEBRASKA.

Personal.—Dr. Julius P. Sedgwick and wife and daughter have returned from Berlin.——Dr. John K. Maxson, formerly of Lincoln, has been committed to the insane asylum. He is said to be suffering from paresis resulting from the use of drugs and liquor.——Dr. R. G. Rich, David City, pursued a burglar out of his house, seized him and, in spite of receiving severe wounds, held him until help arrived. Dr. Rich is expected to recover.——Dr. J. L. Greene, Lincoln, superintendent of the state insane institution, has resigned as examining physician of the county insane commission.——Dr. E. J. C. Sward, Oakland, has been made a member of the State Board of Health.

NEW YORK.

New York City.

Held at Quarantine.—Four of the passengers of the steamship *Comus*, arrived from New Orleans on September 18, were sent to Hoffman's Island for observation.

Bequest for Hospital.—The will of the late Ferdinand Meyer sets apart a certain portion of his estate, of which the exact amount is not yet known, for charitable purposes. Mount Sinai Hospital is to receive one-quarter of this amount.

Purification of Water Supply.—The board of estimate has taken steps toward purifying the water supply by holding public hearings on the proposition to acquire certain lands at Mount Kisco, which are regarded as a menace to the water channels in that district. They anticipate purchasing 113,234 acres of land having an assessed value of $70,000.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended September 16, 444 cases of tuberculosis, with 136 deaths; 172 cases of diphtheria, with 23 deaths; 132 cases of typhoid fever, with 22 deaths; 72 cases of measles, with 2 deaths; 38 cases of scarlet fever, with 4 deaths; 8 cases of cerebrospinal meningitis, with 15 deaths, and 15 cases of varicella.

Going and Coming.—Dr. Samuel G. Tracy returned on the *Philadelphia* September 16.——Dr. and Mrs. John G. Curtis and Dr. and Mrs. William S. Dennett returned on the *Prinzessen Irene* September 20.——Dr. Arthur C. Brush, Brooklyn, returned on the *Cretic* September 17.——Drs. Gordon R. Hall and J. A. McCorkle returned on the *United States* September 17.——Dr. George R. Lockwood returned on the *Frederick der Grosse* September 21.——Dr. and Mrs. D. B. Hardenburgh sailed on the *Prinzessen Irene* September 23.

Model Tenements.—Plans for the first of the model tenement houses to be built with money from the $1,000,000 gift by Henry Phipps are on file. The main features include careful sanitation, fountains in the interior courtyards, roof gardens, kindergartens and the newest appliances for housework. The first of these buildings will be put up in East Thirty-fifth Street between First and Second Avenues. This site was selected because of the cosmopolitan population. There will be from two to four rooms in each suite and the rooms will all be open to the air. The rent will not exceed $15 a month for any apartment.

OHIO.

Arrested, Fined, Flees.—"Dr." Andrew Robinson, a member of a patent medicine show at Niles, who was fined $25 and costs for criminal assault September 11, fled from the town before paying his fine.

New Hospital.—The Ruth Hospital at the Children's Home, Hamilton, was formally dedicated September 16.——The cornerstone of the new Good Samaritan Hospital, Zanesville, was laid with due ceremonies September 24.

Accept Annuity Proposition.—At a meeting of the trustees of the Painesville Hospital they accepted the proposition made by Mrs. J. L. Whetstone to give the hospital $1,000 on the condition that an 8 per cent. annuity be paid her.

Colleges Opened.—The Medical Department of the Toledo University opened September 28. Dr. Park L. Myers has been appointed dean of the department, succeeding Dr. William A. Dickey.——Starling Medical College, Columbus, opened Sep

tember 13 for its fifty-sixth annual session. Dr. Starling Loving, dean of the college, gave a clinical lecture as the opening address, and this marked the beginning of the forty-eighth year of Dr. Loving's connection with the faculty of the college.

The Afflicted.—Dr. Martin L. Williams, Warren is critically ill with pneumonia.——Dr. Lewis D. Brumm, Celina, fell while alighting from a car in St. Mary's and fractured his clavicle. ——Dr. William E. Wheatley, Lorain, was operated on for appendicitis September 12 at the Lakeside Hospital, Cleveland, and is reported to be doing well.——Dr. Albert L. King, Youngstown, is critically ill.——Dr. Collins M. Hoover, Alliance, fell downstairs a few days ago and sprained his ankle. ——Dr. Jerome Bland, Bucyrus, had a cerebral hemorrhage August 31 and is in a precarious condition.

Personal.—Dr. Alexander M. Steinfeldt, Columbus, left for Europe September 2.——Dr. Mary L. Austin has been appointed assistant physician at the Ohio Hospital for Epileptics, Gallipolis, and Dr. Rose E. Timmons has been appointed assistant physician at the Toledo State Hospital.——Dr. Arthur E. Evans has resigned as surgeon of the Baltimore & Ohio Railroad in Columbus and Dr. William L. Dick has been appointed in his stead.——Dr. J. C. Sheets and Dr. Daniel W. Gans, Massillon, have returned from a trip to the Pacific Coast.——Dr. Myron Metzenbaum, Cleveland, has been awarded the bronze medal for "Original Research in Chemistry, Physics and the Medical Value of Radium," by the jury of awards of the Louisiana Purchase Exposition, St. Louis.

PENNSYLVANIA.

Smallpox.—It is reported that there are at least 30 fully developed cases of smallpox near Williamsburg. As usual, the cases were at first diagnosed as chickenpox.

Injured.—Dr. John H. Enterline, Shamokin, was thrown from his sulky in a runaway accident. His left knee was badly wrenched and he sustained severe contusions.

Fined for **Not Reporting Contagious Case.**—For neglecting to report cases of diphtheria to the Board of Health, Dr. Milton H. Weaver, Richlandtown, was arrested September 11 and fined $10 and costs.

Personal.—Dr. and Mrs. Thomas H. Gray, Erie, have returned from an extended trip to the Northwest.——Dr. and Mrs. James K. Pollock and family, New Castle, returned September 9 after a trip to the Pacific Coast.

Sells Practice: **Resumes It: Court Enjoins.**—Judge Johnson granted an injunction September 23 on petition of Dr. Howard F. Taylor of Ridley Park, restraining Dr. David McMasters from practicing in the borough or interfering with the practice of Dr. Taylor. Dr. McMasters sold his practice to Dr. Taylor in April, 1904, for $300, and promised to refrain from practice in Ridley Park.

Philadelphia.

Personal.—Drs. T. Oram Ring, James A. Kearney and Boardman Reed have returned from Europe.——Dr. William H. Temple has been seriously ill in the Medico-Chirurgical Hospital.

Carnival **Cash for Charity.**—The sum of $1,100 was realized from the street carnival held in behalf of the St. Agnes and the Methodist hospitals. The proceeds are to be divided equally.

Fined **for Speeding Autos.**—Drs. John B. Deaver, Philadelphia, and Henry Stoeber, Chester, were arrested in Philadelphia September 8, charged with speeding their automobiles. Each was fined $12.62, which was promptly paid.

Hospital **Reports for August.**—St. Agnes' Hospital admitted 180 patients to the wards and treated 625 new and 1,972 old cases in the dispensaries.——There were 152 patients admitted to the wards of St. Mary's Hospital and 580 new and 1,508 old cases were treated in the clinics.

Bacteriologic **Laboratory Report.**—The report of the bacteriologic laboratory of the Health Bureau reveals that 805 diphtheria examinations were made, 424 specimens of blood, 1,058 specimens of milk and 100 specimens of sputum were examined, and that 853 bottles of antitoxin were distributed.

Impure **Food Indictments.**—Forty persons were indicted by the grand jury September 22 for alleged violation of the pure food laws. The specific offenses were: Adulterated soda syrups, 21; adulterated jams and preserves, 5; adulterated chocolate cake, 3; oleomargarin, 3; adulterated ginger, 1; adulterated meats, 3.

Medical **Business and Ethics.**—At a stated meeting of the Philadelphia County Medical Society, held June 21, a resolution was adopted conveying a request that each medical school furnish its senior class with a special course of lectures or addresses on the subjects of medical ethics and the business aspect of the practice of medicine, and including the recommendation that graduates promptly join the local county medical society.

Jewish Charities Report.—The Federation of the Jewish Charities for the fiscal year ended April 30 reports that $118,600 was distributed during the year to 12 charitable institutions. Among these the Jewish Hospital Association received $30,000; the Jewish Foster Home, $20,000; the United Hebrew Charities, $28,200; the Jewish Maternity Association, $8,000; the Jewish Emigration Society, $800, and the National Jewish Home for Consumptives, $3,000.

To Suppress Bogus Hospitals.—As a result of investigations made by United States Postal Inspector Malone, an effort will be made to suppress the practice of bogus doctors and medical concerns of various kinds in the city. An appeal will also be made to the Board of Health to revoke the licenses of a number of lying-in establishments, on the ground that they are being used for criminal malpractice. Letters in the possession of the inspector will be used as evidence against the proprietors of these so-called hospitals in which offers are made to perform operations at prices ranging from $5 to $500.

Health Report.—The deaths reported from all causes for last week numbered 409. This is an increase of 20 over those reported the previous week and an increase of 8 over those reported the corresponding period of last year. The principal causes of death were as follows: Typhoid fever, 11; consumption, 50; cancer, 16; apoplexy, 24; heart disease, 33; acute respiratory disease, 22; enteritis, under 2 years, 39; enteritis, over 2 years, 17; Bright's disease, 28; accidents, 13; marasmus, 16. There were 184 cases of contagious disease reported, with 13 deaths, as compared with 166 cases and 16 deaths for the previous week.

Will Have Bulletin.—The medical societies of Philadelphia commenced the publication of a weekly bulletin, similar to that issued for the last three years by the Chicago Medical Society. It contains the programs of the affiliated societies, announcements of meetings, and items of interest to the local profession. Dr. A. B. Hirsch, 1711 Diamond Street, is the editor. In the issue for September 16, the information blank for the Biographical Card Index and American Medical Directory is copied, with the request that each physician fill out and return the blank in order to insure full registration of the Philadelphia profession.

GENERAL.

Excursion to International Medical Congress.—Arrangements have been completed for chartering a vessel on which the American delegates to the Fifteenth International Medical Congress at Lisbon, April 19-26, may sail as one party. The organization of the party is in the hands of the following committee: Drs. Lewis S. McMurtry, Louisville; Nicholas Senn, Chicago; J. B. Griffith, Kansas City, Mo.; W. F. Southard, San Francisco; Frank P. Norbury, Jacksonville, Ill.; W. T. Corlett, Cleveland, Ohio; C. H. Hughes, St. Louis, Mo.; R. T. Morris, New York City; A. Vander Veer, Albany, N. Y.; Joseph M. Mathews, Louisville; J. B. Murphy, Chicago; F. B. Turck, Chicago; James E. Moore, Minneapolis; Charles Wood Fassett (secretary in charge), St. Joseph, Mo. The party will sail from New York April 7 on the North German Lloyd steamer *König Albert;* some will return May 9 and others later or by a different route. Itineraries of various tours are being prepared. Further information regarding reservations and copies of itinerary may be obtained by addressing Dr. Charles Wood Fassett, Krug Park Place, St. Joseph, Mo. Those wishing to become members of or contribute to the congress, should communicate with the secretary of the American committee, Dr. Ramon Guiteras, 75 W. Fifty-fifth street, New York City.

The Journal of Biological Chemistry.—Announcement is made of a new journal by this name, to be edited by Drs. C. A. Herter, New York, and J. J. Abel, Baltimore. The scope of the journal will be appreciated from the following taken from the announcement just received:

> Without rigidly defining the scope of the journal, it may be stated that its pages will be open
>
> 1. To workers in zoölogy and botany and the branches of knowledge in which these sciences are applied, for such of their researches as are of a chemical or physico-chemical nature.
>
> 2. To workers on the chemical side of the experimental medical sciences, as physiology, pathology, pharmacology, hygiene, physiologic chemistry and bacteriology.
>
> 3. To those who are engaged in any branch of clinical medicine, when their researches are of a chemical nature.

4. To the specialist in organic chemistry, who will find here a fitting place for the publication of researches which have biologic or medical interest.

The growing importance of chemical research in the elucidation of general biologic and medical problems, and also the increasing activity of American investigators in this field, point to the need of a journal of the character here outlined. At present there is no periodical in the English language that meets the requirements of the biologic chemist.

With the hearty co-operation of American investigators the editors feel confident that the new journal will prove truly representative of the best work in biologic chemistry.

We have no doubt that the journal will receive the co-operation of the scientific men of America, as it undoubtedly will deserve such co-operation. Its price will be $3 a volume. Communications for the journal should be addressed to 819 Madison Avenue, New York.

Yellow Fever News.—In New Orleans the epidemic is gradually wearing itself out. The daily number of new cases averages about 35, and deaths about four or five. At the infected points in Louisiana the disease still spreads, although there is great improvement at the worst points. At Tallulah Dr. J. H. Anderson has the fever, as has also Dr. C. M. Shanley of Jefferson, both having been actively engaged in sanitary work.—— At Algiers a lawyer sued for trespass Surgeon Currie, Marine-Hospital Service, and his assistants for fumigating his house. He lost his case and was in turn prosecuted for failure to obey the mosquito ordinance. At some points the friction between medical men over the diagnosis of yellow fever is extreme.—— In Mississippi there has been some spread of the infection to new points, but in general the situation is fully under control. Vicksburg and Natchez each have had about 50 cases and five deaths. The coast is nearly free of new cases.——In Florida the epidemic at Pensacola still continues to be menacing, over 50 cases having occurred there.——In Georgia the quarantine contest between the state and city boards of health has got into court. Dr. J. J. Knott of Atlanta has tried to persuade the United States Public Health and Marine-Hospital Service that yellow fever is phosphorous poisoning caused by phosphoric exhalations from swamps and that turpentine is the real prophylactic.——Cincinnati has five cases of yellow fever at the contagious disease branch of the City Hospital. The patients were refugees from Tallulah and Lake Providence, La. Detroit threatened Cincinnati with quarantine.——Delegates from twelve states will meet at Chattanooga on November 9 and 10 to discuss quarantine and related matters.——Yellow fever will be discussed at the second international sanitary convention to be held at Washington, beginning October 9.——Dr. Goldberger and Dr. Rosenau of the United States Public Health and Marine-Hospital Service are now on detail at New Orleans to study the bacteriology of yellow fever.——Lexington, Ky., has two refugees ill with yellow fever.——The New Orleans record to September 26 is: New cases Septembr 25, 37; total cases, 2,868; deaths September 25, 3; total deaths, 370; death rate, 12.9 per cent.

CANADA.

New Convalescent Home for Winnipeg.—Winnipeg hospitals being generally overcrowded, it is proposed to erect a convalescent home, where patients as soon as they have become convalescent, will be removed, to make room for new patients in the hospitals.

McGill Medical Faculty Reopens.—On September 19 the opening lecture of the medical faculty of McGill University was delivered by Dr. A. Jacobi of New York. Dr. Jacobi dealt chiefly with reminiscences on medical education. The most important statement and the one which pleased the student body was: "I dislike the name of 'specialist.'"

Toronto's Good Health.—One year ago there were 21 cases of scarlet fever in Toronto. This year there has not been a single case reported since July 29. Up to September 15 there were reported 22 cases of diphtheria. A year ago there were 86 cases in the whole of September; in August there were 48 cases. There were 19 cases of typhoid fever in September last year; already there have been that number up to September 15. Last month there were 38 cases.

Change in Railway Medical Fees.—The system in vogue as regards the treatment of employes of the Canadian Northern Railway by medical men has been changed. Formerly 50 cents a month was deducted on all salaries under $100 a month, and $1 on all salaries over. This was handed by the railway to the physicians who were to supply treatment, medicines and hospital attendance. This for some time has not been satisfactory to the employés and they have organized an association, appointed a leading Winnipeg physician as chief of their medical staff, and will hereafter conduct their own sick benefit matters.

Winnipeg General Hospital.—The following figures show the increase in the work of the Winnipeg General Hospital during the month of August, 1905, over that of August, 1904 The number of patients treated in August, 1905, was 613; in August, 1904, 512; the number of days' treatment in August, 1905, 7,394; in August, 1904, 5,771; number of patients treated from Jan. 1 to Aug. 31, 1905, 2,904; in 1904, 2,412; number of outpatients treated in August, 1905, 395; in August, 1904, 292; number of deaths in August, 1905, 28; in August, 1904, 25. The total number of individuals treated during the week ending September 16 was 329, of whom 207 were men, 92 women and 40 children.

Personal.—Dr. Park and Dr. James Anderson of Hamilton, Ont., have gone to England.——Dr. Jacobi of New York will deliver the opening lecture to the Medical Faculty of McGill University at the opening of the coming session.——Dr. A. S. Monro, Vancouver, B. C., has gone to the hospitals of England for several months.——Dr. George H. Matthewson, Montreal, has gone to Naples and Vienna.——Dr. J. M. Eaton of Carberry, Man., accompanied by Dr. Schaffner of Boissevain, Man., has gone to represent Manitoba at the American Public Health Convention at Boston.——Dr. W. A. Clark has resigned his position as resident physician of St. Boniface Hospital, Winnipeg, and will practice in Arcola, Man. He has been succeeded by Dr R. N. Burns.

Dr. R. A. Reeve, President British Medical Association.—On September 19 two medical meetings of some importance took place in Toronto. The first was a general meeting of the profession of Toronto, and the second a meeting of the local branch of the British Medical Association. The former was presided over by Dr. A. J. Johnson, and the particular item of business transacted was the appointment of a special committee to confer with the local branch in regard to the arrangements for the meeting here in August, 1906. At the meeting of the local branch Dr. R. A. Reeve, dean of the medical faculty of Toronto University, was unanimously elected to the office of president. Chairmen and secretaries have been appointed for twelve sections. The committee of arrangements has not yet been chosen.

Convention Re the Insane in Ontario.—A conference has been called by the minister of the crown in Ontario, under whose jurisdiction is the administration of the asylums and hospitals of the province, the object being to discuss the care and general management of the insane. The medical superintendents and other officers will meet the minister on September 20, and among the subjects discussed will be the limit which should be placed on the admittance of those afflicted with senile decay, the regulations that should govern the admission of defectives and degenerates, and the conditions under which an insane person should be committed to jail. Another matter to be investigated will be that of payment for people confined therein at the public expense, which ought to be borne by friends of such individuals.

Personals and News Items.—The Guelph Sanitarium is building an addition to cost $100,000.——The medical faculty of Laval University, Montreal, opened for the session on September 15. Dr. E. P. Lachapelle delivered the opening address.——Dr. W. H. Montague, formerly of Hamilton, Ont., has removed to Winnipeg, but will not practice medicine.—— Dr. W. J. Bell, surgeon, R. M. S. *Empress of India*, Vancouver, has resigned and has returned to Toronto.——Dr. Allan H. Adams, superintendent of the Toronto Free Hospital for Consumptives, has resigned and has been appointed a house surgeon in the Toronto General Hospital.——Dr. J. W. Good, Winnipeg, has donated a complete operating room to St. Boniface Hospital, Winnipeg.——The force of the Canada army medical corps will hereafter consist of 150, all ranks, of whom 9 will be stationed at London, 10 at Toronto, 11 at Kingston, 9 at Montreal, 9 at Fredericton, 20 at Halifax and 10 at Winnipeg. The remainder will be located in the west at places not yet selected.

Toronto General Hospital.—The outdoor departments of the Toronto General Hospital have undergone alterations and improvements during the summer, the total cost of which has been borne by one of the trustees, Mr. Cawthra Mulock. The board of trustees are at once to embark on a vigorous campaign to raise funds for the new hospital, which, it is expected, will be completed for occupation in three years. There is the possibility of the appointment of a new board of management. In such case the present hospital trust will be able to hand over to them the property of the existing trust valued

at $600,000, producing annually nearly $25,000. The Ontario government has voted $250,000 and has authorized the University of Toronto to grant an additional $50,000. The city of Toronto has granted $200,000 and Mr. Cawthra Mulock has given $100,000, and there is said to be available from another private source an additional $100,000, which with the subscriptions to be asked from wealthy citizens will enable the trustees to make a good start toward what promises to be one of the finest hospitals in America.

Ontario Alienists Confer.—A conference of the medical superintendents of the various provincial hospitals of Ontario for the insane took place in Toronto on September 20, the object being to confer with the minister under whose department these institutions are governed. Dr. W. N. Barnhardt, Toronto, read a paper advocating pathologic work in these institutions. Dr. D. Campbell Meyers, Toronto, contributed a paper on the prevention of insanity, and advocated wards in general hospitals for functional nervous cases, too often confined to the hospitals for the insane. This met with pronounced favor, and it is likely the government will move in the matter at an early day. The chairman of the Toronto General Hospital Trust was present and stated that his hospital was prepared to adopt this principle at once and had set apart the residence of the former superintendent, Dr. Charles O'Reilly, for that purpose. Another matter dealt with was the question of insane people being jailed. Resolutions were passed favoring instructing magistrates not to commit such people unless application for their admittance had been made to some of the provincial hospitals. Hereafter the medical superintendents will not be required to do any clerical work, such as the making of reports, to the department of the government.

FOREIGN.

Yellow Fever in Brazil.—During the week ending August 13 there were three deaths from yellow fever in Rio de Janeiro, and seven new cases were reported, of which number six were verified.

Date of British Medical Association.—At the meeting of the Toronto branch of the British Medical Association, September 19, it was decided that August 21-24, 1906, should be the date of the next meeting of the British Medical Association, to be held in Toronto, Canada.

Plague in India.—According to *Public Health Reports*, the cholera epidemic in Madras is steadily increasing, the total number of deaths from the middle of July to the middle of August being about 1,000. On August 14 there was an outbreak in the Church of Scotland Zenana Mission; 15 cases and 7 deaths were reported.

Yellow Fever in Guatemala.—Consul-General Owen reports that yellow fever has spread from the coast into the interior. The towns of Zacapa and Gualan, on the line of the Guatemala Northern Railway, are infected. Deaths from yellow fever are also reported to have occurred at Tucura, at the head of the Polochi Valley.

Variola in Chili.—There is very little new information regarding the outbreak of variola in Chili. It is stated that the epidemic in Valparaiso has undergone considerable amelioration. Statistics from the various cities are conflicting, however. It is stated that the number of deaths from this cause in Valparaiso from January 1 to August 24 is 3,560, showing that the epidemic has been a very serious one.

Cholera in China.—Acting Assistant Surgeon Ransom of the Public Health and Marine-Hospital Service reports from Shanghai that cholera is absent from the official statistics, but that he has definite knowledge of the death of one person, a foreigner, from this disease, and that an Englishman died suddenly under suspicious circumstances. Dr. Ransom states that cholera is reported to be very prevalent in the city of Hanku.

Typhoid Fever in France.—It is reported that there is an epidemic of typhoid fever in the department of the Seine-et-Oise. The epidemic began at Pontoise and extended toward Gagny. It is attributed to the dispersal of sewage water over the fields in this district where the soil is principally limestone. Through fissures in the soil, wells are contaminated by seepage. Active measures have been instituted to restrict the spread of the disease.

Correction Concerning Quarantine at Inagua.—Dr. W. T. Williams, medical health officer of Inagua, British West Indies, desires to correct a Pennsylvania news item in THE JOURNAL of August 12, which states that the steamship *Barnston* from Colon "put into Inagua for medical attendance on account of sickness of two of her crew, who were put off at that place.' Dr. Williams states that the *Barnston* put into Inagua with 15 of her crew sick, but as he was not certain in regard to the diagnosis, the cases looking suspiciously like yellow fever, no communication was allowed with the shore, with the exception that two men were sent aboard to assist in working the ship to its destination. As there is no hospital at Inagua no accommodation could have been made for the men had they been brought ashore.

New Treatment of Cholera.—Prof. J. Stumpf of Würzburg has been testing in the prevailing cholera epidemic in Germany a means of treating the disease which he thinks will arrest and abort it and any other infectious gastrointestinal affection. The aim is to change the environment for the bacteria so that they are unable to propagate and they die off. This he accomplishes by burying them under a layer of Fuller's earth. He gives from 70 to 100 gm. of Fuller's earth, stirred into a pint of water, having the patient sip it all within twenty to thirty minutes. He gives 30 gm. to children, and 10 to 15 gm. to infants. No food should be taken for eighteen to twenty-four hours and no alcohol. Even in advanced stages its action has proved beneficial, and it has proved very successful in all forms of gastrointestinal infections in his experience. His preliminary communication on the subject is published in the *Berliner klin. Wochft.* of September 11.

Recent Public Health Regulations in Germany.—The Hamburg courts recently prohibited the public advertising of "corpulin" as a remedy for obesity, claiming that it conflicted with the decree in regard to medicines, dated June 1, 1900. The courts also imposed a penalty for delivering morphin on a forged prescription. The Berlin courts have further prohibited the sale of hydrochloric acid without a prescription to a person not known to the dealer to be reliable. The Trier court recently decided that the advertising of a method of curing deafness, worded in such a way as not to deceive the public, can not be forbidden by police authority. The Prussian courts have prohibited the public announcements in regard to the so-called remedy "oxydonor-victory," claiming that it comes under the ban of goods offered for sale with intent to deceive. The text of the above proceedings is published in the Transactions of the Imperial Council of Health.

Medical Substituting.—The Prussian Medical Court of Honor recently fined a physician $125 and costs, with some other penalties, for failing to provide a substitute when he left his practice for a few weeks. The suit was brought at the instance of a patient whom he had been treating for a leg ulcer. The physician left unexpectedly and instructed his servant to tell any patient calling for him to apply to some other physician. This patient did not call in another physician for several weeks, when the condition of the lesion was found to have become so much worse from lack of care that amputation was necessary. The Court of Honor affirmed that it was his professional duty to inform—by letter at least—this patient, whom he had been treating for nineteen weeks, that he was going away, and to impress on him the necessity to have the treatment continued by some other physician. The court held it incumbent on a physician, in case of his absence from town, to see that some one will do his work in so far that the continuance of appropriate treatment of patients in his charge shall be ensured.

Cholera in Europe.—THE JOURNAL of September 2 quoted the *St. Petersb. Med. Wochft.* of August 4 to the effect that it had been officially announced that no case of cholera had been known to occur in Russia since April. "The suspicious cases had proved to be some other disease on microscopic examination." Our German and French exchanges also published this announcement, but they are now calling Russia to task for what must evidently have been a misrepresentation of facts and breach of the international sanitary agreement, if the inner circles of the government were not better informed than the general public anouncement. If this proves not to have been the case, the chancellor of the realm is urged to take steps to protect Germany against further violations by Russia of the international sanitary agreement and the dangers resulting therefrom. Cable advices September 26 state that the total of cases in Germany to date has been 246, with 85 deaths. Two new cases and two deaths were reported in the preceding twenty-four hours, all in eastern Prussia. One patient was found September 23 in Berlin, a canal boatman from the infected district in the northeast. His boat was moored in the river in the heart of Berlin; all the bathing houses along the river have been closed and other measures taken. There have been several cases in Galicia, and the Austrian authorities have redoubled their vigilance.

Pellagra in Italy.—The Italian government has been successful in reducing the prevalence of pellagra in that country, as proved by the recently published statistics. In a period of 22

years the number of those afflicted with this disease fell from 104,000 in 1881 to 72,000 in 1899, and to 60,000 in 1902. In Latium, which till recently was immune, several cases were reported, but the further spread of the disease was checked by the energetic measures adopted by the provincial pellagra commission. Of these measures the most efficacious and essential is the active surveillance exercised on the importation and sale of maize, which is the food mainly used by the poorer classes of the rural population. Corn which has been pronounced unfit for human food may be used for animals and for the distillation of spirits, but it must first be "denaturized." This may be accomplished in various ways, care being taken that the change in appearance thus produced is a permanent one which will render the unwholesome flour or grain easily recognizable. When this is to be used as food for animals, molasses or refuse from cheese or jam factories or a quantity of oil residue mixed with the pods of legumes is added to it and the whole is then seasoned with rock salt. To determine whether a sample of maize is fit for human food the examiner notes that it has the natural lustrous appearance and the characteristic sweetish odor and taste of the sound grain. If the surface is moldy or the taste acrid or bitter the corn is condemned. While part of the specimen may come up to the required standard and be sufficiently mature, well dried and in good preservation, it is necessary to see that not more than 5 per cent. of the grains are damaged. To decide this chemical tests are also employed. When, on combustion, the quantity of ash exceeds 4 per cent., and when extracts from the maize give, with ferric chlorid, an evident phenolic reaction (indicating the development of mycetes), the grain is rejected. Other tests of good maize are that at least 80 per cent. of the grains should possess germinating power and that extracts made from it and injected into animals should not produce toxic effects. By such means and by energetic and vigilant control over the importation of maize into the country and over its supply to the population who use it for alimentary purposes much is being done to preserve the poor in the rural districts of Italy from the ravages of a terrible disease.

LONDON LETTER.

The Health of London.

The report of the Metropolitan Asylums Board for 1904, which has just been issued, contains much interesting information with regard to the health of London in that year. The board now possesses 17 infectious hospitals, 5 asylums for imbeciles, a training-ship, 15 homes or schools for certain classes of children, and 8 ambulance stations. During the year 21,183 patients passed through the fever hospitals and 538 through the smallpox hospitals. Special attention is called to the decline in the mortality from diphtheria, which in 1893, the year before the introduction of the antitoxin treatment, was as high as 30.4 per cent. At one of the hospitals a record has been kept of the mortality rates according to the day of the disease on which the antitoxin treatment was commenced. Of 204 cases treated during the years 1897 to 1904, on the first day of the disease not a single one was fatal; of 1,278 treated on the second day the mortality was 5.4 per cent.; whereas, in cases not treated until the fifth day or later, the rate has been upward of 22 per cent. The cases of mistaken diagnosis numbered no fewer than 1,993, a percentage on the total admissions of 10.7. These cases were detained in hospital an average of twenty-five days. In the board's imbecile asylums 8,026 persons have been under care; 5,853 have passed through the various children's homes and schools.

The Neglect of Vaccination: 20,000 Warrants to Serve in Derby.

The anti-vaccination cranks muster in great strength in certain towns of England. In such towns the municipal authorities, who are elected by the people, are strongly anti-vaccinationist and, consequently, do not enforce the law. Of these Leicester has been the most notorious, but it seems that Derby has eclipsed it. An extraordinary position has arisen as the result of twenty years' official neglect to enforce the vaccination act. It is estimated that there are no fewer than 20,000 defaulters against whom distress warrants have been issued but not executed. Representations have from time to time been made to the government with a view to enforcing the law. The home secretary has now sent an ultimatum which has caused some consternation. He has informed the watch committee that unless the police take steps to execute the warrants he will withdraw the government grant toward the aid of the police, which last year amounted to $30,000. Accordingly the town council instructed the chief constable to put the act into operation. But apart from the formidable nature of the task the anti-vaccinationist feeling is so strong that none of the local auctioneers will conduct the sale of the property of defaulters.

Outbreak of Ice-Cream Poisoning in Birmingham.

Dr. J. Robertson, health officer of Birmingham, has presented a report on a remarkable outbreak of 52 cases of ice-cream poisoning in that city. The interval from taking the ice-cream to the onset of symptoms varied from half an hour to eight and one-half hours. All the patients complained of pain in the stomach and vomiting. In the majority of cases there were diarrhea and collapse. Chemical analysis showed none of the ordinary poisons in the ice-cream. Bacteriologic examination showed that it contained a poison capable of causing inflammation and death in guinea-pigs. This was due to the presence of a bacillus or bacilli of the colon group. About 250 persons purchased the ice-cream, which was made amid very insanitary surroundings and in close proximity to three water closets in a filthy state. Professor Leith, who made the bacteriologic examination, conjectures that excremental organisms were blown into one of the buckets of ice-cream while it was in a warm condition and that rapid multiplication of the organisms took place.

Report of the Commission on Sleeping Sickness of the Royal Society.

The continuation report on sleeping sickness in Uganda by Captain Greig, I.M.S., and Lieutenant Gray, R.A.M.C., has just been published. The evidence brought forward shows: 1, That sleeping sickness is at first a specific polyadenitis caused by the *Trypanosome gambiense;* 2, that a constant lymphocytosis exists at all stages of the disease; 3, that sleeping sickness is the last stage of this disease and is invariably fatal; 4, that resistance of both men and monkeys varies greatly and that acquired immunity is probable; 5, that the action of arsenic *in vita* on the *Trypanosome gambiense* is partial; 6, that bacterial invasion, chiefly coccal, occurs in some cases in the very last days of the sleeping sickness stage of the disease and, therefore, can not determine the onset of this phase of the malady; 7, that in Uganda trypanosomes other than the *T. gambiense* are pathogenic in animals; 8, that these differ entirely from *T. gambiense;* 9, that one of these is probably identical with *T. brucei;* 10, that all trypanosomes are conveyed from the sick to the healthy by the tsetse fly, *Glossina palpalis*, and not by other biting flies (*stomoxys*). In the sleeping sickness areas of Uganda from 50 to 75 per cent. of the inhabitants are in the stage of polyadenitis and are carrying on their ordinary work. These infected people, as they present no symptoms of illness, are especially liable to infect "clean" fly belts and so spread the disease. Recently the districts around Lake Albert and the source of the Nile have become infected and the presence or absence of *Glossina palpalis* in Egypt becomes an important factor in determining the spread of the disease to the north along the shores of the Nile. A newly discovered feature in the morbid anatomy of sleeping sickness is a curious condition of the stomach, comparable with the petechial hemorrhages found under the endocardium and epicardium in trypanosoma infections. The lymphatic glands in every case of sleeping sickness are enlarged and the juice taken by puncture during life contains active trypanosomes.

Irrational Treatment of the Severely Injured.

In a letter to the *Lancet* Mr. C. H. Whiteford makes a very vigorous protest against the current practice of ordering the immediate removal to hospital of a person who has been severely crushed or mangled. The result is the inquest at which the house surgeon reports that the patient was in a state of collapse from which he never rallied and that he died a few hours later. The necropsy often shows an injury which was not incompatible with survival. To remove a patient in a state of collapse, often in a jolting uncovered vehicle over a long distance, is the most certain method of diminishing or destroying any chance of recovery. While it is unadvisable to leave a severely injured man in a gutter or open field, his removal to the nearest place of shelter, usually only a distance of a few yards, is all that is necessary. Here, under the influence of stimulants and warmth, he will recover from the shock, if such recovery is compatible with his injuries. Later he may be removed to a hospital. With the possible exception of cases of internal hemorrhage or injury to internal organs—conditions frequently combined or indistinguishable—the immediate treatment of a severely injured patient can nearly always be summarized as arrest of hemorrhage, rest at or near the scene of the accident, warmth, stimulants, saline injection and, if pain is marked, hypodermic injection of morphin.

A variant of the newspaper account of the inquest is as follows: "The house surgeon stated that the deceased was admitted in a state of collapse, the crushed limbs were at once amputated, but the patient never rallied and died in the evening." Very few severely injured patients survive the extra shock produced by immediate removal to the hospital, followed at once by operation under anesthetic. The fact of a limb being crushed beyond hope of recovery does not justify its immediate removal. The retention for some hours, or even a day, of a mangled limb will not kill the patient, but its removal plus the administration of an anesthetic while he is in a state of collapse is apt to be the "last straw." The immediate treatment of a patient who is brought collapsed to hospital should as a rule be limited to combating the collapse, immediate operation being reserved for such cases as those of internal hemorrhage still going on, in which operation is urgently required.

Fighting Yellow Fever.

At the request of the colonial office the Liverpool School of Tropical Medicine, with the consent of the university authorities, has requested Professor Boyce to visit Belize, in British Honduras, to report on the sanitary measures in that colony necessary in view of the recent outbreak of yellow fever. Professor Boyce, who is now at New Orleans, after completing his observations of the methods employed by the Americans in combating yellow fever, will then proceed to Belize. The latest advices from Brazil have brought news that both members of the yellow fever expedition of the Liverpool school at Manaos have been ill with yellow fever, one very seriously. The expedition expresses the hope that they will now be immune.

Correspondence

The Anti-Tuberculosis Work in Missouri.

ST. LOUIS, SEPT. 18, 1905.

To the Editor:—The best way to fight tuberculosis is to fight it; the best agency in the fight is education. During the past year Missouri has made a great advance in the warfare against consumption, and the work has been taken up earnestly and intelligently both by the physicians and the laity. Two lines of action have been followed—one, the organization of local associations for the study and prevention of tuberculosis; the other, the providing for private and public sanatoria, which in themselves are object-lessons teaching the great principles of limitation.

At the last meeting of the state association, a resolution was passed asking each county society to appoint a committee on local organization, and this is to be acted on throughout the state this winter. In the larger towns action is already being taken in the formation of societies and the appointing of committees on legislation and education.

In St. Louis the Society for the Prevention of Tuberculosis has not been idle. Over 250,000 leaflets and cards have been distributed, placards have been placed in street cars and factories, and literature of different kinds bearing on the subject has been distributed by the school children. The daily press and weekly periodicals have given much space to the presentation of facts, and this has been one of the greatest helps. Lectures have been given in many places by members of the society and many more are scheduled for the winter.

The antispitting law came into effect some time ago, and its observance will be more urgently demanded as a police regulation. The new law providing for the registration of consumptives and the disinfection of apartments occupied by them is one of the best ordinances ever passed in St. Louis. It was framed to be as elastic as possible, and yet in its essential points it is effective.

A most important factor in the educational work is the sanatorium, and Missouri is well advanced in this respect. It is not to be expected that any institution can care for a large percentage of the consumptives in the adjacent territory, but it can reach them all through its influence. The state has this year given $50,000 with which to begin the building and maintaining of a sanatorium for tubercular patients. The board of commissioners intrusted with the duty of locating and building the sanatorium have visited the more prominent institutions in the country and with much care have selected a site at Mount Vernon, in the southwestern part of the state. In addition to this being a most charming and healthful locality, the citizens gave a site of 165 acres, valued at $8,500, with $7,000 in cash, free telephone service and free water and electric light for five years. Of course, while this is a most encouraging beginning, it is only a beginning, but there is no doubt that if this money is judiciously expended the state will amply provide for such additions as may be needed in the future. The commission expects to make the educational feature a large part of the work, and in this to enlist the influence of every reputable physician not only to aid in further legislation, but in giving his personal help in molding public opinion and instructing in the necessary methods for prevention. The commissioners are making large plans, and there is little doubt of success if the work so far accomplished is a criterion.

The private sanatoria in the state are meeting with success. Several of more or less pretention have been started during the past year and several "tent cities" are being planned. Mount St. Rose Sanatorium, in St. Louis, has had over 600 cases in less than three years, and, although the new building was thought large enough, it is now in mind to double the capacity. In the new City Hospital a special building is designated for the consumptives, and the Board of Health is doing all possible to enforce every ordinance and provide for every demand originating in the needs of this work.

But neither the public nor the private institutions, nor both together, can care for all of the 5,000 cases of tuberculosis estimated to exist in St. Louis. Possibly they can not care for 10 per cent., and yet they can be of more value as teachers than as care-takers. At some of these institutions every visiting friend of the patients is given a small leaflet of "instructions" regarding the methods of communication of the disease, prevention, etc., and these are the people most interested. It is following what Dr. Trudeau says: "Give the tubercular patients (and friends) education by means of a pamphlet so that they may learn not to infect others and to care for themselves."

WILLIAM PORTER.

Marriages

JOHN B. URY, M.D., to Miss Lura Kuhn, both of Defiance, Ohio, September 20.

JACOB PRINZING, M.D., to Miss Leah Florence Bourk, both of Ontario, Ore., September 14.

OLIVER FISHER, M.D., Sloan, Iowa, to Miss Mina Norwood of Denver, Colo., September 3.

SOUTHGATE LEIGH, M.D., to Miss Alice Creekmore, both of Norfolk, Va., September 20.

M. D. BAKER, M.D., to Miss Mary Reede Riley, both of Waco, Texas, September 27.

FREDERICK R. GREENE, M.D., to Miss Louise Shandorf, both of Albany, N. Y., August 30.

EDWARD C. KOTTCAMP, M.D., to Miss Blanche I. Dolson, both of Philadelphia, September 6.

D. E. SINGLETON, M.D., to Miss Maude Wainwright, both of Shelbina, Mo., September 19.

ROSS LEE MOTER, M.D., Browns, Ill., to Miss Grace Jones of Princeton, Ind., September 13.

ROBERT B. HIXSON, M.D., to Miss Minerva Barker, both of Cambridge, Minn., September 13.

CLARENCE A. GOOD, M.D., St. Joseph, Mo., to Miss Sophie Evans of Erie, Pa., September 15.

ROY E. MASON, M.D., Sapulpa, I. T., to Miss Elizabeth Patee of La Grange, Mo., September 12.

JOSEPH S. PHALAN, M.D., to Miss Margaret M. Fitzpatrick, both of Philadelphia, September 11.

EDGAR ALLEN P. JONES, M.D., Wingate, Md., to Miss Anna B. Patterson, at Baltimore, September 21.

FRED R. LINTLEMAN, M.D., Harlan, Iowa, to Miss Faith Gertrude Willis of Iowa City, Iowa, September 12.

DANIEL A. GRAY, M.D., Little Rock, Ark., to Miss Annie Statlings of Salisbury, N. C., September 12.

BYRON J. ARNOLD, M.D., Tyler, Texas, to Miss Lessie V. Richmond of Little Rock, Ark., September 14.

CHARLES A. SYLVIA, M.D., Providence, R. I., to Miss Palmira S. Lemos of New Bedford, Mass., September 11.

RODERICK D. KENNEDY, M.D., Globe, Ariz., to Miss Harriet Lawton Hudson of Mukwonago, Wis., August 15.

WILLIAM B. CALDWELL, M.D., Monticello, Ill., to Miss Anna Olentine of Paxton, Ill., at Sioux City, S. D., September 20.

WALTER VOSE GULICK, M.D., Rochester, Minn., to Miss Eleanor Frances Brooks of Boston, at Grafton, Ontario, September 19.

Deaths

Frederick Augustus Baldwin, M.D. Bellevue Hospital Medical College, New York City, 1881, a member of the American Medical Association, New York State Medical Association, and New York County Medical Association; from 1883 to 1886, on the staff of the Eastern Dispensary, New York City; from 1884 to 1885 attending surgeon to the Outdoor Department of Bellevue Hospital; from 1885 to 1889 assistant to the late Dr. Valentine J. Mott, died at his home in New York City September 21, after an illness of six months, aged 59.

Henry L. Day, M.D. University of Buffalo (N. Y.) Medical Department, 1860, a member of the American Medical Association, state, county and local medical societies; a member of the ninth International Medical Congress; assistant surgeon of the Seventy-eighth New York Volunteer Infantry in the Civil War; for 24 years a prominent practitioner and leading citizen of Eau Claire, Wis.; twice mayor of that city, died at his home September 16 from pleurisy, after an illness of a month, aged 66.

Joseph Langford Wever, M.D. Albany (N. Y.) Medical College, 1852, surgeon of the Seventh Kansas Volunteer Cavalry during the Civil War; a pioneer of Leavenworth; prominent in educational matters; for 20 years a member and president of the local school board, and for six years a regent of the state university, died at his home from senile debility September 11, after a gradual decline of a year and a half, aged 80.

Theodore Hopkins, M.D. Toronto (Ont.) Medical College, contract surgeon United States Army from 1850 to 1860; during the Civil War surgeon in the army; in active practice for more than 40 years, died at his home in Niles, Mich., September 10, from peritonitis following cholera morbus, after an illness of one week, aged 84.

Cyrus S. Bulhand, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1874, a pioneer of Cass County, Mich., died at his home in Union, Mich., September 11 from cancer of the stomach, aged 59. The Cass County Medical Society passed resolutions of regret and respect.

Joseph Riley Smith, M.D. Transylvania University Medical Department, Lexington, Ky., 1841, the first white child born in Jefferson County, Ala., and for many years a prominent physician of Birmingham, died at the home of his son in Elyton, Ala., August 30, aged 87.

Guy C. M. Godfrey, M.D. College of Physicians and Surgeons, Baltimore, 1892, captain and assistant surgeon United States Army, committed suicide by shooting himself at his quarters in Fort McPherson, Atlanta, Ga., September 24, aged 34.

David Leonidas Norris, M.D. Jefferson Medical College, Philadelphia, 1897, physician for the Bacon-Nolan Hardwood Company, Chaney, Miss., died at that place September 4 from malarial fever, after an illness of about ten days, aged 33.

Lafayette Balcom, M.D. University of Buffalo (N. Y.) Medical Department, 1864, of Buffalo, N. Y., died at the home of his sister in Detroit, Mich., September 14, from nervous collapse following septicemia, after a long illness, aged 67.

Charles Smith, M.D. Missouri Medical College, St. Louis, 1879, an original settler and a pioneer practitioner of Guthrie, Okla., died at his home in that city September 9 from cirrhosis of the liver, after a protracted illness, aged 48.

James H. Kirk Duff, M.D. Western Pennsylvania Medical College, Pittsburg, Pa., 1904, son of the late Dr. John Milton Duff, died at his home in Oakland, Pittsburg, September 16, after a short illness, aged 25.

Simon Fitch, M.D. University of Edinburgh, Scotland, 1841, consulting surgeon to Victoria General Hospital, Halifax, N. S., died at his home in Halifax September 13 after an illness of six weeks.

John Erwin Plummer, M.D., a member of the Madison County (Ark.) Medical Society, died at his home in Huntsville April 22 from heart disease, after an illness of a year, aged 72.

John A. Wilcox, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1872, Wakefield, R. I., was taken suddenly ill at Narragansett Pier August 28, and died August 30, aged 58.

Thomas Jefferson Wright, M.D. St. Louis Medical College, 1866, died recently at his home in Fort Smith, Ark., from chronic intestinal trouble, after a prolonged illness, aged 69.

E. H. Files, M.D. St. Louis College of Physicians and Surgeons, 1901, of Fallis, Okla., died suddenly at Hot Springs, Ark., September 13, from rheumatic endocarditis.

Alfred A. Dreher, M.D. University of Wooster Medical Department, Cleveland, Ohio, 1884, died at his home in Cleveland, September 19, after a short illness, aged 46.

James R. Walker, M.D. Toledo (Ohio) Medical College, 1891, died at his home in Walbridge, Ohio, September 12 from nephritis, after a long illness, aged 45.

George W. Ellis, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1861, of Philadelphia, died in Paris, France, June 5.

Louis Henry Schultz, M.D. Baunscheidt College, Bonn, Germany, 1857, of Philadelphia, died at Atlantic City August 28 from heart disease, aged 71.

Wilson Stuve, M.D. St. Louis Medical College, 1882, died at his home in Oklahoma City, Okla., August 31, from heart disease, aged 46.

Daniel H. Hanks, M.D. New York City, 1874, died at his home in Ballston Lake, N. Y., September 3, aged 81.

William M. Brown, M.D. Rush Medical College, Chicago, 1881, died at his home in Chicago, September 14.

Deaths Abroad.

Thomas John Barnardo, M.D., the well-known founder and director of institutions for destitute children, whereby more than 55,000 orphan waifs have been rescued from poverty and crime, died at his home in London, Eng., September 20 from angina pectoris after a short illness, aged 60. He was born in England, received his preliminary education in private schools, and subsequently pursued medical studies in London, Edinborough and Paris. He was licensed in medicine in 1876 and obtained the degree of F.R.C.S. Edin., in 1879. In 1886, while in the London Hospital, he first had his attention directed to the condition of the street waifs of London, and the amelioration of their condition he afterward made his life work, placing thousands of them in comfortable homes or on farms in England and in the Dominion of Canada, New Zealand and Australia. In 1885 he was awarded the diploma and medal of the Société Nationale d'Encouragement de Bien of Paris. He was commonly known as the "foster father of nobody's children." He was a member of the British Medical Association, and was consulting surgeon of the Hospital for Sick Children, Stepney.

P. Schubert, M.D., a well-known ophthalmologist and aurist of Nuremberg, prominent for his efforts to promote school hygiene, died at Nuremberg, August 25, aged 56. He was one of the organizers of the first International Congress of School Hygiene held at Nuremberg last year.

B. H. Laehr, M.D. of Zehlendorf, called the Nestor of German alienists, died August 25, aged 85. His sanitarium Schweizerhof, for nervous and mental affections in women, is world-famous, and recently celebrated its semi-centennial.

Dr. Borchert, assistant at the Institute of Physiology at Berlin, committed suicide by taking sublimate when he learned that his application for the post of privat docent had been rejected.

A. J. Kunkel, M.D., professor of pharmacology at Würzburg and author of important contributions to toxicology and hygiene, died at Würzburg, August 23, aged 57.

Book Notices

PHYSIOLOGICAL ECONOMY IN NUTRITION, with special reference to the Minimal Proteid, Requirement of the Healthy Man. An Experimental Study, by Russell H. Chittenden, Ph.D., LL.D., Sc.D. Illustrated. Cloth. Pp. 478. Price $3.00. New York: Frederick Stokes Company, 1904.

There is no subject of greater physiologic importance or of greater moment for the welfare of the human race than that of nutrition. Certain dietetic standards have been more or less widely adopted, but a careful scrutiny of the conditions

under which the data were collected leads to the conclusion that the standards in question have a very uncertain value. Especially do we need more definite knowledge of the true physiologic necessities of the body for proteid or albuminous foods which we are accustomed to look on as the essential foods. The author presents results of extensive experiments and gives brief summaries of the results. The subjects of the experiments represented three quite distinct classes—professional men, soldiers (volunteers from the hospital corps of the United States Army), and athletes. Accepted dietaries, as those of Voit, Moleschott, Ranke, Forster, Atwater and Schmidt, give the minimal daily proteid requirement for the average male adult at moderate work as 100 grammes to 134 grammes. Is it not possible that the accepted dietary standards are too high? The author has always maintained that man is disposed to eat far more than the needs of the body require, but his active interest in this problem was aroused especially by his observations of Mr. Fletcher (first observed by Dr. Van Someren, then by Michael Foster and later by the author), and the marked physiologic economy that Fletcher was able to practice not only without detriment, but with great gain to the body as regards strength, vigor and endurance, coupled with an apparent resistance to disease. The first experiments were on five professional men connected with Yale University as professors and instructors, the author himself being one of the subjects. Dr. Chittenden reduced his ingested proteid to nearly one-third that prescribed by Voit and says regarding his experience with the light diet: "Health, strength, mental and physical vigor, have been maintained unimpaired and there is a growing conviction that in many ways there was a distinct improvement in both physical and mental condition. Greater freedom from fatigue, greater aptitude for work and greater freedom from minor ailments have gradually become associated in the writer's mind with this lowered proteid metabolism and general condition of physiologic economy." The author found that other professional men gave substantially the same results, and summarizes his experiments as follows: "The professional man can safely practice a physiologic economy in the use of proteid food equal to the saving of one-half to two-thirds of the amount called for by existing dietary standards, and this without increasing the amount of non-nitrogenous food consumed." In summarizing the results obtained from experiments on soldiers the author says: "The subjects lived without discomfort for a period of five months on amounts of proteid food not more than one-half that called for by ordinary standard dietaries, and this without increasing the amount of non-nitrogenous food. . . . The subjects were less conscious of fatigue than formerly. . . . All the men have been well and remarkably free from colds and other minor ailments throughout the experiments." The author found that his group of athletes yielded substantially the same results as the other groups. The work is a most valuable contribution to the literature of nutrition.

THE SURGICAL ASSISTANT. A Manual for Students, Practitioners, Hospital Internes and Nurses. By W. M. Brickner, B.S., M.D., with 123 Original Illustrations. Cloth. Pp. 363. Price $2.00. New York: International Journal of Surgery Co.

Few books on surgery devote much space to the duties of the surgical assistant; Brickner's work therefore fills a want. The first chapter deals with the conduct of the assistant and his relations with the surgeon and the patient, and lays emphasis on the fact that the assistant must display considerable tact, especially in answering the patient's questions and in calling the surgeon's attention to details which he may have overlooked. Chapter 2 deals with the duties of hospital internes. Subsequent chapters give in detail the duties of an assistant in the various operations, whether in hospitals or in private houses, and directions are also given for preparing an operating room. Although this latter duty is usually relegated to a nurse and seldom has to be attended to by the assistant; he often must supervise it and see that it is properly done. Twenty-one pages are devoted to the duties of the anesthetist and to the various methods of inducing anesthesia. In it Brickner calls attention to the necessity for good judgment on the part of the anesthetist in order to determine at times whether the patient is "coming out" and needs more of the anesthetic or is getting too much. The book is well illustrated, and an appendix contains directions for the preliminary preparation and postoperative care of patients, methods of preparing suture materials and gauze, and an illustrated list of instruments.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY. Second Series. Vol. X. M.—Mnikhovski. Cloth. Pp. 935. Washington: Government Printing Office. 1905.

This is a welcome addition to the volumes already out. We have commented, in mentioning the appearance of the other volumes, on the excellent typographic arrangement, making the volume so convenient for consultation. This volume contains the important references of: Man, Marriage, Massage, Materia Medica, Measles, Medicine, Melancholia, Meningitis, Mercury, Metabolism, Microscope, Milk and many others, which indicate the value of this volume alone as an index medicus. The word "Medicine" alone covers 270 pages of closely printed references.

PSYCHOLOGICAL MEDICINE. A Manual on Mental Diseases for Practitioners and Students. By M. Craig, M.A., M.D. Cloth. Pp. 449. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co. 1905.

This is a systematic work on psychiatry, beginning with a chapter (18 pages) on normal psychology, embracing a consideration of the different forms of mental disease and ending with a chapter on treatment (39 pages). There is also a chapter of considerable size on general symptomatology, others on feigned insanity, relation of insanity with law, sleeplessness, etc. The author is a thoughtful, competent alienist of wide experience, but he has not found the secret of lucid, consecutive writing. No doubt he himself has a clear appreciation of the fundamental lines, the dominating traits of mental maladies, but he fails to bring them into salient relief. He lacks the power of graphic description. The book and the chapters are systematically divided, the paragraphs are not. For instance, under physical symptoms of alcoholism (page 191), is given a hodge-podge of symptoms; each one correct, but all enumerated in a hit-and-miss way which must be confusing to the student or general practitioner. Another feature which detracts from the value of the work as a text-book is an excess or rather malposition of qualification. The word may is sadly overworked. Frequently the author starts a description with this modifier. For example, on page 150 he begins a presentation of the symptoms of the catatonic form of dementia præcox by saying: "This type of dementia præcox may develop in an insidious manner," and then not only fails to state what the rule of onset is, but entirely neglects to say whether it ever develops in any other way.

All this is not to say that the work is poor, for it is not. In the main, it is a perfectly safe guide, there are very few omissions and we have discovered no errors of fact. Not only is the chapter on treatment good, but through the book this branch of psychiatry receives fuller and better attention than it does in most text-books. The careful and judicious consideration of prognosis will also be a boon to many a beginner and general practitioner. We distinctly approve the insertion of a chapter on epochal insanities—puerperal insanity, climacteric insanity, senile insanity. While they present nothing characteristic in form or nature, the circumstances and some features make it clinically practical to consider them separately. The chapter on general paresis is good. Here the author's experience and good judgment outweighs his rather prosy and disjointed, even distrait, style. The chapters on the relationship of insanity with law and on case-taking will prove most useful to those of limited experience with the insane. The subjects epilepsy and insanity and hysteria and insanity are well done from the viewpoint of the asylum physician. In matters strictly neurologic, the author is scarcely *au fait*. For instance, he says (page 269) that the Babinski sign is found in paralysis from "organic disease," but fails even to intimate that it is only in organic disease of the pyramidal tract that the sign may be elicited. Further indicative of neurologic delinquency is the section on traumatic neuroses. It is crude to a degree. The book is well printed on excellent paper and the illustrations are fine.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

CONTRACT SERVICE FOR ACCIDENT INSURANCE.

OCONTO, WIS., Sept. 22, 1905.

To the Editor:—This city has about 6,000 inhabitants. The place has three saw mills, several planing mills and a pail factory. There are eight physicians in the place. The city has no hospital facilities. The physicians here call themselves just plain "physicians and surgeons." We have no specialists. Everyone of these physicians expects to do a certain amount of the surgical work called for, due to accidents in the above-named mills, for individuals who are otherwise considered as belonging to their respective clientele. Under such circumstances would it be an infringement of professional ethics if I signed the enclosed blank contract, and the company with such signed contract succeeded in controlling the accident cases and liabilities connected therewith of the various mill companies located in this city and thus in a manner directing the surgery into the hands of the subscriber, he being then the "contract surgeon"? Please give me your opinion. Kindly return the blank contract to me. How would this compare with contract lodge practice. C. W. STOELTING.

The contract referred to is of a well-known life insurance company and witnesses as follows:

That whenever the said company issues a policy of liability insurance covering business operations conducted within such territorial limits as may be assigned to the doctor, and which provides therein for the furnishing of full medical and surgical attendance to persons injured as a result of the operations covered and contemplated by said contract of insurance and during its full term, then, in that event, the said doctor agrees to furnish such medical and surgical service and reports as may be required.

It is further agreed on the part of the doctor that he will, himself, provide this service or furnish competent and reputable substitutes subject to call at all reasonable hours, and in all cases within reasonable and convenient access to the locations within or in the vicinity of the City of Oconto, Wis., where said business operations may be conducted.

Said company agrees promptly to notify the said doctor on its issuance of any such contracts with complete information as to the name and location of the individual, firm or corporation assured thereunder, and said doctor will immediately designate such of his substitutes as will act in his absence or stead in the performance of the services required to be rendered under each such contract of insurance.

It is further agreed that said doctor shall use his best efforts and influence to arrange for the furnishing of ambulance and hospital services which may be necessary in connection with the injuries covered under said contract as will result in a minimum of expense to the firm or individual who shall become responsible for the cost of such ambulance or hospital service.

In consideration of the foregoing, and as full compensation for all of the services so to be rendered, either by himself or his substitutes it is hereby agreed, that the said doctor shall receive 10 per cent. of the gross earned premiums on all contracts so written, which compensation shall be payable as follows: Five per cent. on the estimated premium, payable the first of the month succeeding the date of the collection of said premium by the company, the balance, making the total equivalent to 10 per cent. of the gross earned premium, shall be payable on the first of the month following the ascertaining and collection of said earned premium.

It is further agreed that this contract may be terminated at the option of either party thereto on thirty days written notice, except that the said doctor agrees at the option of the company to render such full medical treatment of injuries covered by any policy issued prior to such notification until the expiration of such policy.

It is further specified that during the continuance of this agreement, the doctor shall not enter into any contract of a similar nature with any other insurance company.

ANSWER.—From the broad view-point of the general professional welfare there can be but one answer to this letter. The signing of such a contract is, in the widest sense, "unprofessional conduct." Everywhere the profession should agree never to accept work under such conditions. The fees offered are purely contingent; and, according to the good or the ill fortune of the mill hands and varying with the success of the insurance company's agent, the fees may be utterly inadequate or, perchance, too high. In any event the physician's remuneration for his work is wholly speculative. A more objectionable arrangement would be difficult to conceive. On the practical side our correspondent is entitled to sympathy and counsel. No doubt he feels that if he does not accept this contract one of his competitors will. Herein lies the value of a united profession working together. Let all eight of the physicians in the place meet and agree to accept no such contract. If there is already a county society, so much the better, but if not either one should be organized or these eight physicians should at once as a preliminary move agree to stand against this form of contract practice. This is the remedy. It is wholly effectual. Under such conditions the company must either withdraw from caring for its employes in the town or else must arrange to deal fairly with physicians. The ethics of the case is perfectly clear. To accept this contract, means essentially that the contracting physician underbids his competitors in the effort to take from them their work. On no other presumption could this form of liability insurance be made profitable to the mill-owners who take out such policies. Medical men must unite in the effort to put an end to such methods.

CHOICE OF LIGATURES.

WAVERLY, Mo., Aug. 29, 1905.

To the Editor:—What are the main indications for use of silk, catgut and silkworm gut ligatures? What is the best ligature material for bleeding vessels? In a tenorrhaphy where much strain comes would silk do best, and would a flexed position be proper for dressing?

ANSWER.—There are no absolute contraindications to the use of fine silk ligatures in clean wounds, though it is probably better practice to employ catgut. The latter is almost positively indicated in the presence of certain, or even possible, suppuration since its absorption within a few days eliminates a foreign body and, therefore, a *locus minoris resistantiæ*. Silkworm gut is applicable to every form of wound closure (unless buried) as interrupted, tension or continuous subcutaneous sutures. As ligature material, the use of silkworm gut is rarely, if ever, justified. A tendon suture under tension should always be avoided, when necessary, by some form of plastic operative lengthening of the tendon or of the muscle itself. Silk, or better, kangaroo tendon or chromicized catgut, would serve as suture material, but so applied as to give direction to the tendon ends rather than needlessly to make accurate approximation requiring even a little tension. Fixation in any exaggerated position, unless as an over-correction of a pre-existing deformity, as a rule, is to be avoided.

LAPAROTOMY UNDER LOCAL ANESTHESIA IN AGED PATIENT.

MANCHESTER, N. H., Sept. 20, 1905.

To the Editor:—Noticing Dr. Igel's report of an operation on a patient 72 years old, I would like to mention one. In a man aged 78 there was an irreducible inguinal omental hernia, on the right side, which had been strangulated for 24 hours. The patient was removed about four miles, in an ambulance, to a local hospital, and under subcutaneous injection of sterile water, the sac was opened. The ring was cut, the omentum tied off, and the canal closed. He was allowed up on the eighth day: walked about the next day, and went home on the thirteenth day. A. H. WHEAT.

State Boards of Registration

COMING EXAMINATIONS.

Central District Indian Territory Board of Medical Examiners, South McAlester, October 2. Secretary, W. B. Caldwell, Hugo.

Utah State Board of Medical Examiners, Salt Lake City, October 2. Secretary, R. W. Fisher, Salt Lake City.

Board of Medical Examiners of Arizona, Phoenix, October 2-3. Secretary, A. Martin, Phoenix.

Idaho State Board of Medical Examiners, Boise, October 3. Secretary, J. L. Conant, Jr., Genesee.

Indiana Board Medical Registration and Examination, State House, Indianapolis, October 3. Secretary, W. T. Gott, Crawfordsville.

Board of Medical Examiners of Montana, The Capitol, Helena, October 3. Secretary, W. C. Riddell, Helena.

North Dakota State Medical Examining Board, Grand Forks, October 3. Secretary, H. M. Wheeler, Grand Forks.

Minnesota State Board of Medical Examiners, Old Capitol Building, St. Paul, October 3-5. Secretary, C. J. Ringnell, Minneapolis.

Rhode Island State Board of Health, State House, Providence, October 5-6. Secretary, G. T. Swarts, Providence.

Regular Board of Medical Examiners of Georgia, The Capitol, Atlanta, October 9. Secretary, F. D. Paterson, Cuthbert.

Michigan State Board of Registration in Medicine, Capitol Building, Lansing, October 10. Secretary, B. D. Harison, Sault Ste. Marie.

State Medical Board of the Arkansas Medical Society, Little Rock, October 10. Secretary, J. P. Runyan, Little Rock.

Board of Medical Examiners of State of Florida, Jacksonville, Oct. 10-11. Secretary J. D. Fernandez, Jacksonville.

Kansas State Board of Medical Registration and Examination, State House, Topeka, October 10-11. Secretary, G. F. Johnston Lakin.

State Board of Medical Registration of Vermont, Y. M. C. A. Hall, Burlington, October 10-12. Secretary, W. S. Nay, Underhill.

Board of Medical Supervisors of Washington, D. C., Washington, D. C., October 12. Secretary, W. C. Woodward, Washington, D. C.

Board of Medical Examiners of State of Texas, San Antonio, October 17. Secretary, T. T. Jackson, San Antonio.

State Board of Medical Examiners of New Jersey, Trenton, October 17-18. Secretary, E. L. B. Godfrey, Camden.

State Board of Health of Illinois, The Great Northern Hotel, Chicago, October 18. Secretary, J. A. Egan, Springfield.

Louisiana State Board, New Orleans, October 20-21. Secretary, F. A. Larue, New Orleans.

Next Florida Examination.—The fall examinations of the Regular Board of Medical Examiners of the State of Florida will be held at Jacksonville, October 10 and 11, at the auditorium of the Board of Trade, corner of Main and Adams streets. Applications for examination must be made in person to the secretary of the board so that he can inspect the diploma of the applicant, and register him on the day prior to the examination, or in the week preceding. Any information desired will be furnished the applicant when he registers with the secretary, at his office, 28 West Ashley Street. J. D. Fernandez, M.D., Secretary, Jacksonville, Fla.; H. E. Palmers, M.D., President, Tallahassee, Fla.

Maryland June Report.—Dr. J. McP. Scott, secretary of the Board of Medical Examiners of Maryland, reports the examination held June 21-24, 1905. Students who had completed the second year were granted an examination in anatomy, chemistry, materia medica and physiology. Their ratings were carried forward and will be made a part of their final examination. The total number of candidates examined was 147, of whom 24 were re-examined in the subjects in which they had previously failed, and 28 failed, while 22 were second-year students. Graduates of the following colleges passed:

The following questions were asked:

PASSED.

University of Maryland, (1904) 77; (1905) the grade of 75 was reached by one; 76 was reached by two; 77 by one; 78 by three; 79 by one; 80 by two; 82 and 83 by two each; 84 by three; 85 by four; 86 by two; 87 by one; 88 by two; 89 and 91 by one each.
University of Pennsylvania.....(1902) 91
University of Virginia.....(1905) 86
College of P. and S., Baltimore, (1901) 75; (1904) 84; (1905) the grade of 76 was reached by one; 80 was reached by two; 81 and 83 by one each; 84 by three; 88 by one.
Woman's Med. Coll.....(1905) 79, 83
Maryland Med. Coll., (1904) 88; (1905) the grades of 75 and 78 were reached by one each; 80 was reached by three; 85 by one.
Baltimore Med. Coll., (1905) 76, 78, 79, 80, 80, 83, 84, 86, 92.
Johns Hopkins University (1900) 88; (1905) 78, 83, 85, 86, 87, 88, 90, 92, 94.
Georgetown University.....(1905) 87
George Washington University.....(1905) 89

The following questions were asked:

CHEMISTRY.

1. (*a*) Define: Atom; molecule; radical; valence. (*b*) Define: Acids; bases; salts. Give the general properties of each with an example. (Applicant must answer either one (*a*) or (*b*) of the questions above, but must not answer both.)
2. Give formula for "hydrogen peroxid" and the reasons for its use in surgery as a disinfectant and antiseptic.
3. Describe bismuth subnitrate and explain the dark color of the stools following its therapeutic use. Name its most dangerous impurity and give test for detection of same.
4. Give formula and general physical properties of chloroform. Construct its "graphic (structural) formula" and from this show what relation it bears to the paraffin group of hydrocarbons, say marsh gas CH_4.
5. What is the chemical constitution of urea? Give approximate amount normally excreted in 24 hours, and a method for its quantitative determination.
6. Give in detail a test for the detection of lactic acid in a specimen of the gastric contents.

OBSTETRICS.

1. Describe the placental circulation.
2. Give the best method of managing a shoulder presentation.
3. Give management of a normal labor in its three stages.
4. Describe anteversion and anteflexion, also retroversion and retroflexion.
5. Mention some of the uses of vaginal tampons and how they should be prepared and introduced.
6. How would you manage a case of prolapsed funis.

MATERIA MEDICA.

1. What do you understand by the incompatibility of drugs? Give example.
2. In what particulars are opium and belladonna synergists and antagonists?
3. Name three of the principal alkaloids of opium. Give dose of each.
4. Name the official preparations of zinc. Dose and use of each.
5. What is the composition of Donovan's solution?
6. What is the source of potassium? Name four of the principal preparations, their use and dose?

THERAPEUTICS.

1. Give the symptoms and treatment of lead poisoning.
2. Give the symptoms you would expect to find when an overdose of chloral hydrate had been taken and the treatment of such a case.
3. What are the therapeutic uses of digitalis and the contraindications for its use?
4. Differentiate the coma of alcoholism, apoplexy, opium and uremia; give treatment of each.
5. Quinin: Indications for, and mode of administration of quinin as an antiperiodic, an antipyretic, and oxytocic How eliminated?
6. Therapeutics of heat.

PRACTICE.

1. Define arteriosclerosis, diabetes mellitus, tenia solium, and dermatitis.
2. Give diagnosis and treatment of angina pectoris.
3. Give differential diagnosis between malarial and typhoid fevers and treatment of each.
4. Give the symptoms of locomotor ataxia; its causes and treatment.
5. Give differential diagnosis between scarlet fever and measles, the treatment and sequelæ of each.
6. Name the symptoms of cerebral hemorrhage.

SURGERY.

1. Give the differential diagnosis of a fracture of the neck of the humerus from a downward dislocation of the humerus, and give in detail a method of treating each condition.
2. Give the differential diagnosis between perinephritic abscess and appendicitis.
3. Give causes and symptoms of adenitis.
4. Give symptoms and treatment of dislocation of radius at elbow.
5. Describe an approved method for the removal of foreign bodies from the ear.
6. Describe an aseptic operation in any region you wish.

PHYSIOLOGY.

1. (*a*) What is the composition of the saliva? (*b*) What is its most important function? (*c*) What action has atropin, pilocarpin and nicotin on the salivary glands and their secretion?
2. What is the difference between Pettenkofer's reaction and Gmelin's test? Describe each.
3. What is meant by diffusion and osmosis?
4. Describe the effect of strychnia on the central nervous system.
5. State what you know of the composition and physiologic action of the pancreatic secretion.
6. Through what three main channels is water lost from the body. Describe the function of each.

PATHOLOGY.

1. Describe the various laboratory methods of sterilization and explain the meaning of the term "fractional sterilization."
2. Give Koch's dicta (laws) regarding the bacterial cause of disease and state whether these dicta (laws) are fulfilled in the following diseases: Typhoid fever; croupous pneumonia; diphtheria; measles.
3. Give Cohnheim theory regarding the cause of tumor formation. Define sarcoma and carcinoma and give the usual method of metastatic extension of each.
4. Describe the gross and microscopic appearances of a solitary gray or miliary tubercle. Give in detail the method of staining tubercle bacilli in the sputum.
5. Describe the autopsy findings, as regards the vascular and urinary systems, one would expect in a case of arteriosclerosis of long standing.
6. Describe what you consider the most characteristic anatomic lesion of typhoid fever and give the chief avenues of elimination of the specific organism from the body.

ANATOMY.

1. Describe the thoracic duct.
2. Name the muscles of the eye and give their nerve supply.
3. What are the ureters and where do they begin and end?
4. Name anatomic structures severed by a circular amputation through the middle of the forearm.
5. (*a*) What are the divisions of the brain? (*b*) Name ventricles of the brain. (*c*) What arteries supply the membranes of the brain?
6. After a ligation of the axillary artery in its middle third, how is collateral circulation established?

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending September 23:

Allen, John H., asst.-surgeon relieved from duty at the Army General Hospital, Presidio of San Francisco, and ordered to Fort Sill, O. T., for duty.

Rich, Edwin W., asst.-surgeon, relieved from temporary duty at Depot of Recruits and Casuals, Fort McDowell, Cal., and from further duty in the United States transport service, and ordered to Fort Ontario, N. Y., for duty.

Dale, F. A., asst.-surgeon, leave of absence extended thirty days.

Williamson, L. P., asst.-surgeon, granted two months and ten days' leave of absence, with permission to go beyond the sea.

Truby, Albert E., asst.-surgeon, ordered to accompany 3d Battalion of Engineers from Presidio of San Francisco, to Fort Leavenworth, Kans., then return to his proper station.

Banister, Wm. B., surgeon, left Jefferson Barracks, Mo., on thirty days' leave of absence.

Reynolds, Chas. R., asst.-surgeon, granted leave of absence for one month and fifteen days.

Kennedy, James M., asst.-surgeon, leave of absence extended thirty days.

Cass, William E., contract surgeon, relieved from duty in the Philippines Division, and ordered to Vancouver Barracks, Wash., for duty.

Woods, Oscar W., contract surgeon, relieved from duty at Vancouver Barracks, Wash., and ordered to the Army General Hospital, Fort Bayard, N. M., for duty.

Wall, Francis M., contract surgeon, left Fort Fremont, S. C., and arrived at Fort Oglethorpe, Ga., for duty.

Halliday, Francis A., contract surgeon, arrived at Fort Fremont, S. C., for duty.

Carpenter, Alden, dental surgeon, ordered to Fort Liscum, Alaska, for temporary duty.

Gardner, Fletcher, contract surgeon, relieved from duty in the Philippines Division, and ordered at the expiration of his present leave of absence to Fort Crook, Neb., for duty.

Hereford, John R., contract surgeon, arrived at San Francisco, on leave of absence for three months, from the Philippines Division.

Boak, S. Davis, dental surgeon, ordered to Fort Washington, Md., for temporary duty, from Fort Myer, Va.

Treuholtz, Clarence A., contract surgeon, returned to duty at the Army General Hospital, Fort Bayard, N. M., from temporary duty in Alaska.

Suggs, Frank, contract surgeon, reported for duty at Fort Mansfield, R. I., after two months' sick leave of absence.

Ware, William H., dental surgeon, left Fort DuChesne, Utah, and arrived at Fort Douglas, Utah, for temporary duty.

Branch, Frederick D., contract surgeon, returned to duty at Fort Wood, N. Y., from sick leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending September 23:

Thompson, J. C., Benton, F. L. surgeons, commissioned surgeons, with rank of lieutenant commander, from March 3, 1903.

Garton, W. M., surgeon, commissioned surgeon, with rank of lieutenant commander, from March 12, 1903.

McCullough, F. E., surgeon, commissioned surgeon, with rank of lieutenant commander, from June 9, 1903.

Furlong, F. M., surgeon, commissioned surgeon, with rank of lieutenant commander, from June 20, 1903.

De Valin, H., acting asst.-surgeon, resignation accepted, to take effect September 20.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending September 20:

Banks, C. E., surgeon, to proceed from Flomaton, Ala., to Magnolia Bluff, Fla., for special temporary duty.

Stoner, J. B., surgeon, granted leave of absence for two days, from September 16.

Goldberger, Joseph, P. A. surgeon, to proceed from Mobile, Ala., to New Orleans, and report to P. A. surgeon N. J. Rosenau for special temporary duty.

Foster, A. D., asst.-surgeon, granted leave of absence for seven days, from August 7, 1905, under paragraph 191 of the regulations.

Peters, R. H., acting asst-surgeon, to proceed from Livingston, Guatemala, to Zacapa, Gualan, Las Amates and Puerto Barrios for special temporary duty.

Stearns, W. L., pharmacist, to proceed to Magnolia Bluff, Fla., and report to Surgeon Banks, for special temporary duty.

BOARDS CONVENED.

Board to meet at Bureau in Washington, D. C., on Monday, September 18, for the purpose of examining candidate for entrance as cadet in the Revenue Cutter Service. Detail for the Board: Asst.-Surgeon J. W. Trask, chairman; H. McG. Robertson, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended September 16, 1905:

SMALLPOX—UNITED STATES.

California: Los Angeles, Aug. 26-Sept. 2, 1 case; San Francisco, 2 cases.
District of Columbia: Washington, Aug. 26-Sept. 9, 9 cases.
Massachusetts: Lowell, Aug. 26-Sept. 2, 1 case.
Michigan: Grand Rapids, Aug. 26-Sept. 9, 1 case, 1 death.
New York: New York, Aug. 26-Sept. 2, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 22-29, 7 cases.
Brazil: Bahia, Aug. 6-12, 3 deaths; Rio de Janeiro, July 27-Aug. 6, 23 cases, 5 deaths; Aug. 13-20, 9 cases, 7 deaths.
Cuba: Santiago Province, Aug. 29-Sept. 5, 2 cases, 1 death.
Ecuador: Guayaquil, Aug. 1-8, 4 deaths; Aug. 15-22, 1 death.
France: Paris, Aug. 19-26, 17 cases, 9 deaths.
Great Britain: Newcastle-on-Tyne, Aug. 16-23, 1 case.
India: Calcutta, July 29-Aug. 5, 3 deaths; Madras, July 29, Aug. 4, 6 cases.
Mexico: City of Mexico, Aug. 12-26, 15 cases, 9 deaths.
Russia: St. Petersburg, Aug. 6-19, 7 cases.
Turkey: Constantinople, Aug. 6-20, 7 deaths.

YELLOW FEVER—UNITED STATES.

Florida: Pensacola, Aug. 29-Sept. 12, 38 cases, 6 deaths.
Louisiana: Ascension Parish, to Sept. 10, 44 cases, 3 deaths; Assumption Parish, Aug. 26-Sept. 11, 13 cases; Caddo Parish, to Sept. 9, 4 cases, 1 death; East Baton Rouge Parish, Sept. 9, 1 case; East Carroll Parish, Aug. 14-Sept. 12, 106 cases, 9 deaths; Iberville Parish, to Sept. 11, 14 cases, 6 deaths; Jefferson Parish, 215 cases, 27 deaths; Lafayette Parish, to Sept. 12, 7 cases; Lafourche Parish, to Sept. 10, 332 cases, 35 deaths; Madison Parish, Aug. 14-Sept. 10, 87 cases, 12 deaths; Orleans Parish, New Orleans, July 21-Sept. 13, 2,406 cases, 323 deaths; Plaquemines Parish, to Sept. 11, 54 cases, 7 deaths; Rapides Parish, to Sept. 3, 7 cases; St. Bernard Parish, to Sept. 12, 33 cases, 1 death; St. Charles Parish, to Sept. 12, 94 cases, 16 deaths; St. James Parish, to Sept. 9, 6 cases; St. John the Baptist Parish, to Sept. 11, 149 cases, 14 deaths; St. Mary Parish, 478 cases, 18 deaths; St. Tammany Parish, 2 cases, 1 death; Terrebonne Parish, to Sept. 9, 90 cases, 3 deaths.
Mississippi: Anguilla, vicinity of Sept. 6, 1 case, imported; Gulfport, Aug. 15-Sept. 11, 53 cases; Gulf Quarantine, July 22-Aug. 26, 57 cases, 1 death; Mississippi City, Aug. 22-Sept. 11, 40 cases; Natchez, to Sept. 11, 23 cases.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, July 30-Aug. 6, 7 cases, 3 deaths; Rio de Janeiro, Aug. 13-21, 3 cases, 2 deaths.
Ecuador: Guayaquil, Aug. 1-8, 1 death; Aug. 15-22, 1 death.
Guatemala: Gualon, Aug. 19-26, present.
Honduras: Puerto Cortez, Aug. 18-25, 2 deaths.
Mexico: Tehuantepec, Aug. 27-Sept. 2, 1 case; Tezonapa, 2 cases; Vera Cruz, 4 cases, 1 death.
Panama: Bocas Del Toro: Aug. 18-25, 1 case; Colon, Aug. 19-26, 2 cases; Panama, 5 cases, 2 deaths.

PLAGUE—FOREIGN.

Africa, Port Elizabeth, July 29-Aug. 5, 1 case.
Brazil: Rio de Janeiro, July 30-Aug. 6, 8 cases, 2 deaths; Aug. 13-20, 2 cases.
India: General, July 15-27, 2,578 cases, 1,810 deaths; Calcutta, July 29-Aug. 5, 14 deaths.
Panama: La Boca, Aug. 6, 1 death.

CHOLERA—FOREIGN.

India: Calcutta, July 29-Aug. 5, 15 deaths; Madras, July 29, Aug. 4, 6 deaths.
Japan: Kobe, July 29-Aug. 12, 2 cases.

Medical Organization

California.

MONTEREY COUNTY MEDICAL SOCIETY.—At a meeting of this society August 5, in Monterey, it was decided by unanimous vote to incorporate the society.

SOLANO COUNTY MEDICAL SOCIETY.—A number of physicians of the county met at Vallejo, July 28, and organized a county medical society to be in affiliation with the state society and the American Medical Association. The following officers were elected: Dr. H. O. Miller, Vallejo, president; Dr. G. C. Browne, Benicia and Samuel G. Bransford, Suison, vice-presidents; Dr. Chadwick E. Arnold, Vallejo, secretary; Dr. Bernard J. Klotz, Vallejo, treasurer, and Drs. Lester P. Hall, Dixon; Winfield S. Makemson, Rio Vista; and W. L. McFarland, Benicia, censors.

Indiana.

CARROLL COUNTY MEDICAL SOCIETY.—This society met at Camden August 18 and reorganized with the following officers: President, Dr. Wilber F. Sharrer, Delphi; vice-president, Dr. Judson J. Schultz, Delphi; secretary, Dr. Charles C. Crampton, Delphi, and treasurer, Dr. Patrick W. Conway, Ockley.

Pennsylvania.

FIFTEENTH DISTRICT MEDICAL ASSOCIATION.—Physicians of Blair, Cambria, Clearfield and Center counties met at Lakemont Park, Altoona, August 15, and organized a district association, electing Dr. Frank A. Ford, Altoona, president, and Dr. James L. Henderson, Osceola Mills, secretary.

West Virginia.

JEFFERSON COUNTY MEDICAL SOCIETY.—Physicians of Charlestown and Jefferson County met at Charlestown August 18, to reorganize a county medical association. Dr. J. J. Pittman, Charlestown, presided, and Dr. George A. Davis, Summit Point, acted as secretary. A letter from the secretary of the West Virginia Medical Association, outlining a plan for reorganization was read, after which the meeting adjourned to meet in Shepardstown, September 1, to complete organization.

Society Proceedings

COMING MEETINGS.

Colorado State Medical Society, Colorado Springs, October 3-5.
American Association of Railway Surgeons, Chicago, October 4-6.
Idaho State Medical Society, Boise, October 5-6.
Delaware State Medical Society, Wilmington, October 10.
Mississippi Valley Medical Association, Indianapolis, October 10-12.
Vermont State Medical Society, Burlington, October 12-13.
New York State Medical Association, New York City, October 16-19.
Kentucky State Medical Association, Louisville,, Oct. 5.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Eighteenth Annual Meeting, held at New York, Sept. 19-21, 1905.

The President, DR. HOWARD W. LONGYEAR, in the Chair.

The association met in College Hall of Hotel Astor, and, after an address of welcome by Dr. George B. Fowler, New York, which was responded to by Dr. Charles A. L. Reed, Cincinnati, proceeded with the reading of papers.

Annual Dinner.

The annual dinner was held at the Hotel Astor, September 20. The toastmaster was Dr. Robert T. Morris. The following toasts were responded to: "American Medical Association," Dr. L. S. McMurtry; "Our Nippon Neighbors," Surgeon-General Suzuki, Imperial Japanese Navy; "American Gynecological Society," Dr. Hermann J. Boldt; "The Doctor's Vacation," Dr. Brooks H. Wells; "In Manchuria with the Belligerents," Dr. L. L. Seaman; "Problems of Public Health," Dr. Daniel Lewis.

Officers.

The following officers were elected: President, Dr. John Young Brown, St. Louis; vice-presidents, Drs. James N. West, New York, and Frank F. Simpson, Pittsburg, Pa.; secretary, Dr. William Warren Potter, Buffalo, N. Y. (re-elected); treasurer, Dr. X. O. Werder, Pittsburg, Pa. (re-elected); members of council, Drs. Robert T. Morris, New York, and Howard W. Longyear, Detroit.

Multiple Pregnancy Complicated by Double Pyosalpinx.

DR. O. H. ELBRECHT, St. Louis, reported an interesting case in detail. The most striking feature was the obscurity of this fortunately rare complication, for without the autopsy he would certainly have abided by his first and only antemortem diagnosis, i. e., sapremia, and would have continued to believe that the general peritonitis was the result of the sapremic infection traveling upward through the tubes and thus into the abdominal cavity, for such a process, to his mind, would be all the more plausible in the large and flabby uterus of multiple pregnancy, more especially from the fact that large blood clots were passed on the first day, showing the relatively imperfect contraction of the uterus. The case also shows very plainly the ability or the degree of tolerance of the pelvic peritoneum to cope with infections, as it is his opinion that the peritonitis was not general until the sixth day, for up to that time there was no hiccoughing, no vomiting, no abdominal distension and no apparent weakness. Another deduction is that gonorrheal peritonitis, while not very dangerous, if confined to the pelvic peritoneum, is surely dangerous when it creeps out of the pelvis and becomes diffuse. It is also his firm belief that the pyosalpinx in this case was unilateral at the time of impregnation, and that the infection was transmitted by the escape of virulent pus to the open fimbriæ of the unaffected side.

The only cases he could find analogous to his have been reported by Hare and Talley. The reports of two pathologists in the speaker's case, who worked independently of each other, both showed that the tube, which was secondarily infected, was infected by way of the fimbriæ, as its pathology was confined entirely to its outer third; the middle third showed only slight inflammatory changes, and the inner third, including the uterine attachment, was normal.

Blank projects the theory that virulent bacteria in the tube have a tendency to become pyosalpinx during pregnancy by reason of the hyperemia. He further states that 50 per cent. of those cases in which the tubes are adherent in the cul-de-sac rupture as pregnancy advances, from tension, pressure or from stretching of the adhesions, which forces pus out of their fimbriated extremity. The experience of the essayist with three cases of this class substantiates Blank's theory. These three cases were reported.

DISCUSSION.

DR. CHARLES A. L. REED, Cincinnati, said that this case, with the pus tube undetachable, only adds one possible condition that points to the reason why possibly these cases should be subjected to operation earlier and more radically than they have been heretofore. With a double pus tube, with antecedent conception, it follows that the deduction of the essayist, that the infection of the tube was unilateral prior to impregnation, was absolutely incontrovertible. As to infection on the other side, the probability is that it resulted from a progressive invasion of tissue, the mucous structure serving as a nidus of infection occurring within the uterus following delivery.

DR. HERMAN E. HAYD, Buffalo, N. Y., is inclined to believe that we see many cases of pyosalpinx complicating delivery that are due to a latent gonorrhea existing in the tube, which springs into activity as a result of the trauma incident to labor.

DR. CHARLES L. BONIFIELD, Cincinnati, believes many cases of double pyosalpinx clear up sufficiently to allow the patients to become pregnant. In years gone by he told patients they would never become pregnant when he detected a mass on each side and there were further evidences of pyosalpinx, and on a few occasions he has been deceived after six, eight or twelve years, the pus having become absorbed and the women having become pregnant. He cited a case he had many years ago of double pyosalpinx, or he thought it was such. The woman refused operation. Everything in the pelvis was matted together. She gradually got better, and at the end of six or eight years became pregnant, and he delivered her. She passed through labor nicely, but at the end of a week she suddenly raised herself in bed and dropped over dead.

DR. RUFUS B. HALL, Cincinnati, does not believe that a woman with double pus tubes can afterward become pregnant. If such a woman should become pregnant he would be inclined to doubt the diagnosis of bilateral pyosalpinx.

DR. JOHN YOUNG BROWN, St. Louis, thinks the mere existence of pregnancy in the case narrated by the essayist precludes the possibility of the woman having had bilateral pyosalpinx. The pathology, as revealed by the autopsy, shows conclusively that the case was one of unilateral pyosalpinx, which was dormant and lighted up by the trauma of labor, and that the leakage from the pus tube produced the diffuse peritonitis, and the condition found on the other side was due to bathing this side with the pus that was produced by the peritonitis.

DR. JAMES F. BALDWIN, Columbus, Ohio, has not had a case of double pyosalpinx followed by pregnancy, yet he thinks it may occur.

DR. LEWIS S. MCMURTRY, Louisville, Ky., said abdominal section in a puerperal convalescent is a very serious procedure. The operation of vaginal incision and drainage, so enthusiastically advocated by Pryor, would accomplish very little in a case like the one reported from the standpoint of therapeutics; hence, in the case reported we have a very valuable addition to the scanty literature of the subject as to the possibility of pathology of the tubes connected with puerperal disease, and a valuable guide to operative interference.

Some General Principles in Conservative Pelvic Surgery.

DR. JOHN F. W. WHITBECK, Rochester, N. Y., said that it is decidedly advantageous to have a general knowledge and a general experience before making use of special methods in the treatment of pelvic disorders. Medical and mechanical means should be tried in suitable cases before resorting to surgical intervention. Only diseased organs should be removed. Sound organs and normal parts of unhealthy organs should be preserved. Conservative plastic surgery should be employed to save such organs as can be made functional or to serve some useful purpose. Diseased organs should be removed in the order of their pathologic precedence and importance, with a view to benefit the patient by promoting her comfort and prolonging her life, even if a perfect cure is not to be expected.

Cesarean Section.

DR. HENRY SCHWARZ, St. Louis, reported the case of a child wife who was in labor sixty hours, with repeated attempts at forceps delivery by the family physician. Apparently she was not infected. Instead of a Porro, as is usual in such cases, he did the classical Cesarean operation, which was followed by recovery of both mother and child. The baby was asphyxiated, membranes and amniotic fluid yellowish green. His assistant worked over the baby an hour at artificial respiration before spontaneous breathing was established. Pressure marks on the scalp showed locking of the head between the promontory and symphysis; necrotic tissue dropped out a few days afterward, and the baby recovered.

Pregnancy Associated with Diabetes.

DR. MAGNUS A. TATE, Cincinnati, mentioned the reports of numerous investigators, calling attention to sugar in the urine of pregnant women. He collected all cases that could be found in medical literature where pregnancy was complicated by dia-

betes. He reported an additional case, and presented a study of these tabulated cases as to their frequency, results, mortality and other similar data.

Cysts of the Mesentery.

DR. ORANGE G. PFAFF, Indianapolis, said that these growths are comparatively rare; their diagnosis is difficult, if not impossible; their pathology is not fully and clearly understood, but most of them, if not all, are of probable embryonal origin. He reported two exceedingly interesting and instructive cases.

(To be continued.)

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARNYGOLOGY.

Tenth Annual Meeting, held at Buffalo, N. Y., Sept. 14-16, 1905.

(Continued from page 939.)

The Lens Capsule in the Operation of Cataract.

DR. HERMAN KNAPP, New York, said that if one lives long enough he will get cataract. He has never seen a patient who, after having attained the age of say 80, did not have a cataract. Only a very small proportion, however, of these cases come to operation. The capsule is the most unpleasant feature in cataract operations, and should be removed with the cataract. Since he has been doing flap extraction he has not had a case of sympathetic ophthalmia. He described his own technic of the operation, and referred to some of the accidents and complications met with in cataract extraction.

Accidents and Complications in Cataract Extraction.

DR. D. W. GREENE, Dayton, Ohio, gave a brief review of the history of the operation, showing the evolution through which the different stages have passed from Petit (1706), Daviel (1745), to the present time. The shifting of the section forward is now accomplished until it is now made entirely corneal. He referred to the smaller iridectomy or its entire omission, and described the different methods of opening the capsule and delivering the lens and cortical débris. Reference was made to the so-called toilet of the operation. He said the combined operation is usually made. He spoke of the accidents in and what are complications of the operation. A strict definition of each is difficult. He outlined the management of a normal case, also the management of accidents and complications. Accidents are usually operative. Complications may be present at the time of operation; they may result from accidents during operation, but as a rule are postoperative. Age as such is never a contraindication. The physical and mental conditions incident to it may be complications. He discussed the matter of when the lens is extracted within the capsule. Allusion was made to the use of flannel bandages, lint and cotton compresses in the treatment. Confinement in bed is not rigidly enforced after the second day. All of the things mentioned are intended to lead up to and make clear the title of the paper, as well as the subjects treated under it.

DISCUSSION.

DR. JOHN E. WEEKS, New York, said that in operating for cataract the incision should be made in the vascular portions of the eye, that is, at the limbus, making a conjunctival flap. He now makes a conjunctival flap in all cases. He removes a portion of the capsule. The method of opening the capsule advocated by Knapp is a good one, but is not free from objection. The method recommended by von Graefe for opening the capsule is excellent. He prefers the combined operation rather than simple extraction.

DR. EDWARD JACKSON, Denver, has for several years practiced opening the capsule; he demonstrated his method of doing it.

DR. ALVIN A. HUBBELL, Buffalo, said the incision of Daviel is ideal, but Dr. Hubbell makes it upward instead of downward, almost at the corneo-scleral junction. The drawbacks of the simple operation are greatly in excess of those of the combined method. He prefers the combined operation. The capsule can be opened centrally. He favors the T-shaped incision of von Graefe, and spoke of the importance of irrigating the anterior chamber.

DR. EUGENE SMITH, Detroit, said that it is an easy matter to remove the anterior capsule in operating for cataract, and he has been doing this for several years—fifteen or twenty years. He prefers simple extraction in suitable cases, the combined operation in others. He advocates the use of capsule forceps.

DR. BAKER, Cleveland, added his testimony to the value of the peripheral capsulotomy of Knapp. He favors the combined method.

DR. J. E. WILLIS, Pittsburg, said the lens should be extracted as soon as possible, and with the least interference with the eye. He favors simple extraction, as he gets better results. He thinks it is an ideal operation. He believes a preliminary iridectomy is unnecessary.

Cyst of the Thyroglossus Duct.

DR. JOHN J. KYLE, Indianapolis, stated that the thyroglossus duct is an embryologic structure which disappears about the eighth week of fetal life. From faulty growth the duct may remain and manifest itself in extrauterine life by the formation of a cyst, which may be situated near the base of the tongue or between the deep fauces of the neck, and between the hyoid bone and the thyroid cartilage. The review of the literature was given with the description of the case observed in a woman 45 years of age.

DISCUSSION.

DR. ANDREW TIMBERMAN, Columbus, has never seen a case of cyst of the thyroglossus duct. He spoke of the difficulties attending the diagnosis of it.

DR. KATE WYLIE BALDWIN, Philadelphia, has had two cases of cyst of the thyroglossus duct, one in a girl of 16 and the other in a woman of 25. In one the cyst was the size of a hickory nut; in the other the size of a pullet's egg. These cysts were thoroughly dissected out; healing by first intention occurred, and there has been no return.

DR. JOSEPH C. BECK, Chicago, saw a case in the practice of Nicholas Senn, which was operated on, but in which recurrence took place.

The Pinguecula and Pterygium.

DR. ADOLPH ALT, St. Louis, read a paper with this title which was illustrated by stereopticon slides. He reviewed the literature on this subject, with special reference to the connection between the two affections from the standpoint of the pathologist, and said that it rehabilitates in some measure Arlt's marginal ulcer as a cause of pterygium.

The Mammalian Eye.

DR. CASEY A. WOOD, Chicago, gave a talk on the mammalian eye, illustrated by colored slides prepared from original drawings by the artist, Dr. A. W. Head. This is the first time these fundus pictures were ever presented or exhibited in America, and it is through the courtesy of Dr. Head that they were obtained.

Filaria Loa.

DR. DERRICK T. VAIL, Cincinnati, discussed the varieties of nematodes simulating *Filaria loa* (eye worms); he described the parasite, its habitat, and mentioned the theories as to its development. He also spoke of the mode of infection and of the rarity of actual cases in this country. He reported a genuine case and exhibited specimens.

The Ciliary Processes in Accommodation.

DR. F. PARKE LEWIS, Buffalo, spoke of the importance of accommodation in relation to the eye itself, and pointed out the difficulty of studying the problem from a physiologic standpoint. He said that pathology interrupts its smooth working and makes evident points otherwise obscure. Tension was directed to the inadequacy of the Helmholtz theory. The Tschernings theory is more satisfactory, but is not explained by the mechanism. The relations and nature of the ciliary processes were discussed. Nature adapts an organism to existing necessities; but does not often vary fundamental principles. He describes the ciliary processes in the pig, in the reptile, in the bird, in the fish and in man, illustrated by a series of stereopticon slides. The segmental action of the ciliary

processes is necessary to explain visual correction of an astigmatic cornea. There is conjugate action of corresponding segments in one eye or in both. He spoke of its importance in nutritive conditions of the lens, and in sympathetic ophthalmia in correlated brain centers.

Should Tonsillar Tissue Be Removed in All Cases?

DR. GEORGE W. SPOHN, Elkhart, Ind., said that the glandular tissue in the pharyngeal vault, between the pillars of the fauces, at the base of the tongue, within the ventricle of the larynx and within the nasal orifices, is generally known as the tonsillar tissue. As regional glands they are physiologic. As tonsils they should be known as pathologic conditions. As diseased glands, tonsils should be removed. When not diseased and normally functionating they should not be removed.

Spontaneous Hemorrhage into the Vitreous.

DR. THEODORE B. SCHNEIDEMAN, Philadelphia, stated that hemorrhages into the vitreous of traumatic origin are not very rare, but spontaneous hemorrhage is quite uncommon. The latter is dependent on changes in the walls of the blood vessels. Of constitutional affections responsible for such changes, tuberculosis, pernicious anemia, syphilis, malaria, are to be particularly mentioned. In older subjects atheroma occupies the first place. In the two cases the author reported the underlying cause was obscure. One occurred in a young man of 21, and the other in a neurotic woman about the time of the menopause.

Hemorrhage from the Eye.

DR. ALVIN A. HUBBELL, Buffalo, reported two cases of profuse hemorrhage from the eye. One was from the conjunctiva of a new-born infant after several instillations of a 2 per cent. solution of nitrate of silver, and the other from the eyeball of an adult whose cornea had become ulcerated and perforated in the course of a long-continued glaucoma.

DISCUSSION.

DR. W. L. DAYTON, Lincoln, Neb., mentioned a case of retinitis albuminurica occurring in a young patient in whom there was extensive hemorrhage into the vitreous about the macular region. The peripheral portion of the retina could be distinctly seen.

DR. F. PARK LEWIS thinks the cause of hemorrhage into the vitreous in some cases may be due, first, to some local degenerative condition of the vessels, and, second, to some irritative condition of sufficient intensity to cause the normal vessel to contract.

DR. PERCY FRIDENBERG, New York, narrated an interesting case of intraocular hemorrhage in connection with disorders of menstruation. In this case both retinæ became detached.

DR. EDWARD J. BERNSTEIN, Kalamazoo, Mich., reported a case of intraocular hemorrhages with fibrous bands in a boy of 14. The case progressed to complete disorganization of the eye.

DR. ALVIN A. HUBBELL recalled four cases of recurrent hemorrhages into the vitreous. All of the patients were males. Two were young men of 22 or 23. The other two were men in middle life. In each case the hemorrhages occurred at irregular intervals, and the hemorrhages would absorb with very little destruction of vision. He has never seen a case of recurrent hemorrhage into the vitreous in a female. He has no explanation to offer as to the cause of these hemorrhages.

DR. GEORGE M. GOULD, Philadelphia, referred to eye-strain as a possible cause of hemorrhage into the vitreous. He has seen several cases of hemorrhage into the vitreous or anterior portions of the eye which he has relieved, and these were found to be due to eye-strain.

DR. H. B. YOUNG, Burlington, Iowa, has seen, in the past month, a case of spontaneous hemorrhage into the vitreous in a man, 30 years of age, married, of good habits, but who for years has had chronic albuminuria. Young considers the connection between a vitreous hemorrhage and albuminuria a definite one. He has also seen a case of excessive subconjunctival hemorrhage in a man of 50 without any known cause.

DR. L. A. W. ALLEMAN, Brooklyn, reported cases similar to those narrated by Gould.

DR. GOULD raised the point as to whether strong solutions of nitrate of silver may not cause these vitreous hemorrhages in some cases.

DR. ADOLPH ALT, St. Louis, mentioned a case in which one drop of a 2 per cent. solution of nitrate of silver was dropped on the cornea, and in a few hours thereafter hemorrhage from the conjunctiva occurred which could not be controlled, so that the child died in a week or less from exhaustion and exsanguination.

DR. JOHN E. WEEKS said that in the preparations of silver we have protargol and argyrol, which are efficient and harmless remedies. If argyrol is used in a strength of 35 per cent. solution, or protargol in a relatively strong per cent., the danger to the patient would be *nil*, and the effect produced would be as good, in his opinion, as that to be obtained by the use of nitrate of silver.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Hyperidrosis.

Brocq, in *Archives de Méd. et Chir.*, recommends that insoles made of filter paper, linen or cork be saturated with the following mixture and allowed to dry before being inserted in the shoes:

℞. Potas. perman. ..... gr. xv 1
Thymol ..... gr. viii 50
Aquæ ..... ʒiiiss 105

M. Sig.: Saturate the insoles with the solution, and after they have dried insert them into the shoes, and change daily.

Or:

℞. Naphthol ..... gr. lxxv 5
Glycerini ..... ʒiiss 10
Alcoholis ..... ʒiiiss 105

M. Ft. lotio. Sig.: Bathe the feet well with the lotion and dust them with the following powder:

℞. Naphthol ..... gr. xv 1
Pulv. amyli ..... ʒii 60

M. Sig.: To be used as a dusting powder for the feet.

Or the following powder may be used:

℞. Pulv. talci ..... ʒi 30
Bismuthi subnit. ..... ʒx 40
Potass. perman. ..... gr. xlv 3
Sodii salicylatis. ..... gr. xxx 2
Pulv. amylii. ..... ʒii 60

M. Ft. pulvis. Sig.: To be used locally as a dusting powder. Or:

℞. Tinct. ferri chloridi. ..... ʒi 30
Glycerini ..... ʒiiss 10

M. Ft. solutio. Sig.: Apply locally to the soles of the feet.

Or:

℞. Quin. sulphatis. ..... gr. lxxv 5
Acidi tannici. ..... gr. xxx 2
Alcoholis ..... ʒiii 90
Aquæ ..... ʒviii 240

M. Ft. lotio. Sig.: To be used as a wash for the feet.

This is to be followed by a powder composed of:

℞. Acidi salicylici. ..... gr. xlv 3
Pulv. amyli ..... ʒiiss 10
Pulv. talci ..... ʒiii 90
Pulv. aluminis ..... ʒiss 45

M. Ft. pulvis. Sig.: To be used as a dusting powder for the feet. Or:

℞. Tinct belladonnæ. ..... ʒvi 24
Spiritus odoratus ..... ʒiv 120

M. Sig.: To be applied locally to the sweating feet.

Treatment of Phlebitis.

Phlebitis, according to Robin in *Med. Press*, should be divided into three distinct phases: acute, convalescent and chronic.

As soon as the trouble is properly diagnosed the limb should be placed in a box or wire splint and well covered with cotton wool, first powdering it with the following:

℞. Acidi boracici 3iii 12
Pulv. talci .....℥iii 90

M. Ft. pulvis. Sig.: Dust over the affected limb before applying the splint.

He does not recommend the local application of ointments as usually recommended during this stage, but prefers the dry treatment. Milk should be the principal article of diet. At the end of three weeks or a month the second stage, as mentioned by the author, begins, when the splint should be removed from the limb and the limb gently rubbed with a lubricant such as lanolin or oil of theobroma, and again enveloped in cotton wool and allowed to rest on a support for three days. If at the end of that time no pain is felt or any rise of temperature observed, the covering may be removed and the following gently applied locally once a day:

℞. Ext. hamamelidis flu.....3ss 2
Lanolini .....℥i 30

M. Ft. unguentum. Sig.: Apply locally to the affected limb.

At this period the limb may be given massage in a gentle manner to promote the general circulation. It must be done lightly with the palm of the hand for five or six minutes once a day. In order to facilitate resolution the following may be rubbed in every evening:

℞. Ergotin 3i 4
Kalii iodidi
Ext. nucis vom., āā.....3ss 2
Lanolini .....℥i 30

M. Ft. unguentum. Sig.: Apply locally.

After fifteen days of this treatment active and passive movements of the limb are recommended by the author, these consisting in flexion, extension, abduction and rotation of the foot.

The treatment of phlebitis is concluded by the author by applying a bran bath every day for twenty minutes, gradually lengthening the time to forty-five minutes. After the bath the patient must be instructed to rest for half an hour, when massage should be given for ten minutes, followed by a rest of thirty minutes, when the patient may be allowed to take a little exercise on the feet. This treatment may be kept up for three weeks, but the author cautions against giving massage in the region of the large veins, in the popliteal space, in Hunter's canal or in Scarpa's triangle. To promote the nutrition of the atrophied muscles and to improve the venous circulation walking is recommended in moderation, avoiding fatigue. This author forbids the patient standing or sitting down; he must either walk or lie down.

To Prevent the Shedding of Hair.

David Walsh of London, according to an abstract in *Med. Standard*, recommends the following combination to prevent the hair from falling out, stating that it is preferable to an ointment, especialy in the cases of women:

℞. Acidi salicylici 3iii 12
Acidi carbolici 3i 4
Olei ricini 3iii 12
Spts. vini rectif. q. s. ad.....℥vi 180

M. Sig.: Apply locally once or twice daily.

Mucus Colitis.

R. C. Kemp, in *Amer. Med.*, recommends in the treatment of mucus colitis that the patient be put to bed and heat applied to the abdomen by means of flaxseed poultices, turpentine stupes or hot pepper poultices, using dram one (4.00) of red pepper to a pint of boiling water, a flannel wrung out of this solution applied to the abdomen and covered with oiled silk. Dry heat may be employed if necessary by means of a hot-water bag, a hot bag of salt or a tin plate heated and covered by flannel and applied to the abdomen. Moist heat, however, is preferable. The greatest relief from the cramp, according to the author, are afforded by enteroclysis, using a recurrent irrigator and the normal saline solution at a temperature of from 110 to 120 F., and adding the oil of peppermint, from five (.30) to fifteen minims (1.00) to the quart of water. Several gallons may be used once or twice in the twenty-four hours, allowing no water to remain in the bowels to excite further cramps. High enemas of olive oil, using a pint or a quart of the oil, are also of value in relieving the spasm in similar manner to the relief of spasm of the pylorus by the internal administration of olive oil.

Hot saline enemas containing from two to four ounces (60 to 120) of the milk of asafetida are also of value in relieving the cramps.

Liquid diet, such as broths, soups and milk, should be prescribed. The tincture of belladonna as recommended by all authors is advised, beginning with 10 minim doses every three or four hours, and increasing the dose till the physiologic symptoms occur, is recommended to give relief from the spasms. Occasionally the author resorts to codein in doses of grain ¼ to grain ½ (.015 to .03), or even morphin in doses of grain ⅛ to grain ¼ (.008 to .015) when the pain is excessive.

If the acute attack is prolonged the valerianates or asafetida are recommended internally and the milk of asafetida as an enema. Between the attacks proper support to the abdomen is advised, producing pressure backward and upward by means of a silk abdominal supporter, or in its stead an alhesive plaster belt. If the latter is used the surface of the abdomen must be smoothly shaven and cleansed with alcohol or ether before the adhesive belt is applied. The belt should be changed about once in four weeks. To relieve constipation enemas of the normal saline solution are recommended several times a week to promote intestinal peristalsis, and in this way to prevent the accumulation of mucus and thus to lessen the tendency to the recurrence of the spasms. He emphasizes the importance of using only the normal saline solutions or the demulcents as enemas for the removal of the mucus, as the condition is due to hypersecretion and not to inflammation. He avoids the use of irrigations of silver, tannin, alum, etc., as they can produce an artificial hypersecretion. Nux vomica or strychnia may be given between the attacks to increase the muscular tone of the intestine. If much gastrointestinal fermentation is present the following combination is recommended:

℞. Resorcini .....gr. v |30
Sodii benzoatis |
Bismuthi salicylatis, āā.....gr. v-x |30-.65

M. Ft. capsula No. i. Sig.: One such capsule three times a day before food.

W. H. Thomson recommends the following in mixed cases in which some catarrh of the intestine is present:

℞. Argenti nitratis..... gr. v |30
Resinæ terebinthinæ 3iii 12
Liq. potassæ 3i 4
Pulv. glycyrrhizæ q. s. |

M. Ft. pil. No. lx. Sig.: Three pills three times a day.

Copper sulphate grain ¼ (.015) may be substituted for the foregoing later. Fowler's solution in one-drop (.06) doses three times a day is also recommended in mixed cases.

The general treatment consists in outdoor exercise, such as golf, to strengthen the abdominal muscles, and in winter fencing is of value. Anemia must be corrected by means of Bland's mass combined with small doses of arsenic and nux vomica.

Medicolegal

Age or Weight and Personal Injuries.—The Court of Errors and Appeals of New Jersey holds, in the personal injury case of Staines vs. Central Railroad Company of New Jersey, that the fact that the injuries of the plaintiff would not have happened to a younger person, or one of less weight, did not absolve the defendant from liability for such injuries.

Injured Physician May Testify as to Earnings.—The Supreme Court of Missouri says, in the case of Sluder vs. St. Louis Transit Co., where a physician was incapacitated to practice his profession for eleven and one-half weeks by a collision of a street car with a carriage in which he was riding, that no reason was stated why it was not competent for the physician himself to testify what his actual monthly prac-

tice averaged him. It was not guesswork, but actual knowledge, to which he was testifying. It was not remote, but the value of his profession to him for the immediate months during which he was disabled, and the court agrees with him that the best evidence was the actual earnings of the month in which he was injured. In other words, the court holds that there was no error in permitting him to testify to his earnings for the corresponding months of the previous year.

Mental Disease Relieving from Criminal Responsibility.—The Supreme Court of Georgia holds, in Allams vs. State, that where the accused on trial for murder relied on the defense of insanity at the time of the homicide, it was not error to instruct the jury that the burden was on him to show "that at the time of the killing he was not of sound memory and discretion. He must show this not beyond a reasonable doubt, but to the reasonable satisfaction of the jury, by a preponderance of the evidence." Nor was it error on the trial of such a case to charge the jury that, if the accused had been shown to be insane prior to the date of the homicide, the presumption would be that he continued to be insane, "and the burden of proof would be on the state to show to the reasonable satisfaction of the jury, by a preponderance of the evidence, that at the time of the alleged homicide the defendant was of sound memory and discretion."

The rule of law in force in Georgia which relieves one from criminal responsibility for the commission of an unlawful act on account of mental disease is: If a man has reason sufficient to distinguish between right and wrong in relation to a particular act about to be committed, he is criminally responsible. An exception to this rule is where a man has reason sufficient to distinguish between right and wrong as to a particular act about to be committed, yet, in consequence of some delusion, his will is overmastered, and there is no criminal intent, provided that the act itself is connected with the peculiar delusion under which the prisoner is laboring. It follows, therefore, that it was not accurate to charge as follows: "The insanity which the law recognizes as an excuse for crime must be such as dethrones reason and incapacitates an individual from distinguishing between right and wrong as to the particular act in question, and of being mentally incapable of choosing to do or not to do the alleged act, and governing his conduct in accordance therewith." To relieve one from criminal responsibility on account of mental delusion for the commission of an unlawful act, it is not necessary that he be incapable of distinguishing right from wrong as to the particular act in question, and also incapable of choosing to do or not to do such act, and of governing his conduct in accordance therewith.

Alcoholic Compounds Labeled as Medicines.—The United States Commissioner of Internal Revenue says, in Internal Revenue Circular No. 673, dated Sept. 12, 1905, addressed to collectors of internal revenue, with regard to alcoholic compounds labeled as medicines and held out to the public as remedies for diseases.

Among the various alcoholic compounds now on the market, advertised and sold under the name of whisky, bitters, tonic, cordials, etc., there are some that are composed chiefly of distilled spirits, or mixtures thereof, without the addition of drugs or medicinal ingredients in sufficient quantities to change materially the character of the alcoholic liquor.

The fact that these compounds during the existence of the statute imposing tax on proprietary medicines were without the necessity of investigation into their character by the terms of the law made subject to that tax, because they were held out to the public as medicines, does not afford ground for relieving the manufacturers from special tax as rectifiers and liquor dealers, or dealers therein from special tax as liquor dealers under the provisions of Section 3244, Revised Statutes, and amendments.

It is held that the statute requires the exaction of this special tax from the manufacturer of every compound of distilled spirits, even though drugs are declared to have been added thereto, when their presence is not discoverable by chemical analysis, or it is found that the quantity of drugs in the preparation is so small as to have no appreciable effect on the alcoholic liquor of which the compound is mainly or largely composed.

The same ruling applies to every alcoholic compound labeled as a remedy for diseases and containing, in addition to distilled spirits, only substances or ingredients which, however large their quantity, are not of a character to impart any medicinal quality to the compound; but where substances undoubtedly medicinal in their character are combined with whisky or other alcoholic liquor, and are used in sufficient quantity to give a medicinal quality to the liquor other than that which it may inherently possess, such compound is, of course, not to be included in this ruling.

The question, in each case, arising under the terms of this circular will be determined by this office, not merely on examination of the formula submitted by the manufacturer of the compound, but on result of the analysis in the chemical laboratory here of samples obtained in the open market and sent in by the local internal revenue officers and agents.

The ruling as to these compounds in the fourth paragraph of Circular No. 608 (Treasury Decisions, 1901, Vol. 4, p. 210), "that if they are composed of spirits in combination with drugs, herbs, roots, etc., and are held out as remedies for diseases stated in labels on the bottles, they are to be regarded as medicines until the facts ascertained, as to the purpose for which they are usually sold or used, show them to be beverages, and until such facts are obtained druggists and merchants who sell these compounds in good faith as medicines only are not to be called on to pay special tax as liquor dealers on account of such sales," is hereby revoked.

But in order that no injustice may be done to these druggists and merchants who, without holding special-tax stamps as liquor dealers, now have in stock these compounds for sale as medicines, this circular will not be put into effect until Dec. 1, 1905.

Collectors will, however, immediately on the receipt of this circular send out notice to all druggists and merchants dealing in proprietary medicines in their districts who do not hold the requisite special-tax stamp as liquor dealers, that on and after Dec. 1, 1905, they will be required to pay special tax for selling the alcoholic compounds coming within the ruling now promulgated, even when they sell them in good faith for medicinal use only, never selling them as beverages, nor selling them knowingly to those buying them for use as beverages. [In this connection, see editorial Sept. 23, 1905.]

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

September 16.

1 Treatment of Malignant Strictures of the Rectum. H. A. Kelly, Baltimore, Md.
2 *Therapeutic Value of Bactericidal Serums. H. D. Pease, Albany, New York.
3 *Gastrojejunostomy for Benign Stenosis of the Pylorus. W. H. Morrison, Philadelphia.
4 Acute Prostatitis. H. M. Christian, Philadelphia.
5 *Emotional Shock and Fright as Causes of Epilepsy. W. P. Spratling, Sonyea, N. Y.
6 Chorioepithelioma Malignum. W. L. Wallace, Syracuse, N. Y.
7 *Operative Treatment of Cleft Palate and the Causes of Failure. J. D. Singley, Pittsburg, Pa.

2. **Therapeutic Value of Bactericidal Serums.**—Pease reviews some of the clinical results obtained by the use of the various antistreptococcic serums in streptococcus infections, scarlet fever, rheumatism and smallpox, and the antipneumococcic, antityphoid, antituberculosis, antidysenteric, antiplague and antianthrax serums in their respective diseases, and calls attention to the variability in the reports of different writers on their results from the use of these serums, and the necessity for taking the personal equation into consideration in passing judgment on such reports. He concludes that it is evident that in no one of the diseases considered has there yet been demonstrated an entirely satisfactory serum therapy. Although sufficient beneficial results have been obtained with some of the streptococcic, dysenteric, plague and anthrax antiserums to warrant at least some hope of better results when

our knowledge of these infections and their etiologic agents has become materially increased.

3. **Gastrojejunostomy for Benign Stenosis of Pylorus.**—Morrison reports the case of a man, aged 44, who came under observation when he was suffering from a sudden attack of severe hematemesis. He had had three previous attacks at intervals of about one year; in the intervening periods he was fairly well and able to work. There had been considerable digestive disorder with frequent attacks of vomiting. Examination showed marked dilation of the stomach, the greater curvature extending two inches below the umbilicus. There was no tenderness and no tumor could be detected. The contraction of the pylorus increased until apparently nothing passed into the intestine, all food taken being vomited after a longer or shorter interval. The abdomen was opened in the median line and a communication established between the posterior part of the stomach and the jejunum, four inches from the duodenojejunal fold, a large-sized Murphy button reinforced by a continuous peritoneal suture being employed. Recovery was uneventful.

5. **Emotional Shock and Fright as Causes of Epilepsy.**—According to Spratling, emotional shock and fright, as causes of epilepsy, do not receive the attention they should. Epilepsy may supervene immediately after the application of such a cause or be delayed for some time. The reapplication of the primary cause often induces successive attacks similar in nature. Predisposition usually exists in all such cases. In 1,323 cases Spratling found emotional shock or fright to have been the cause in 62 cases, 5.5 per cent. Of these patients, 22 were males in a total of 814, and 40 were females in a total of 509, being 3 per cent. of the former and 8 per cent. of the latter. This shows such causes to be nearly three times as active among men as among women. This greater susceptibility in women is present from childhood. During the first ten years of life there were 14 cases due to this cause among 814 males, and 15 cases among 519 females. After the twentieth year there was only one case in either sex. It appears from the studies in question that emotional shock or fright most often leads to epilepsy in the female sex, and that these factors are most apt to be active about the age of puberty.

7. **Operative Treatment of Cleft Palate.**—Singley states that the results in the operative treatment of cleft palate are almost certain to be good if accurate approximation can be secured and maintained without tension. From three to five months before operation a dentist places in the three upper posterior molars a small metal clamp, the two sides of which can be gradually approximated by a screw and nut, thus diminishing the width of the cleft. The clamp is removed a few days before operation. The edges of the cleft are split laterally, using a small knife with a flexible copper shank, thus securing broader surfaces for union. The relaxation incisions on either side are kept packed with strips of iodoform gauze, preventing contraction during healing of these incisions with pulling on the suture line. A marked Trendelenburg posture is used with the head of the patient just above the knees of the operator. Proper postoperative treatment ranks next in importance to approximation without tension. This comprises absolute starvation for two or three days with nutritive enemas, absolute prohibition of talking, and frequent irrigation of the parts with a mild antiseptic solution. The gauze packing is removed and replaced daily.

Medical News, New York.

September 16.

8 *A Test of Condition: Preliminary Report. C. W. Crampton, New York.
9 Intussusception. W. E. Dicken, Oklahoma City, O. T.
10 Retained Intubation Tube Treated by Gradual Dilatation. F. L. Taylor, New York.
11 Dermoid Cysts of the Mediastinum. R. S. Morris, Ann Arbor, Mich.
12 Diagnosis and Differential Diagnosis of Incipient Pulmonary Tuberculosis. H. F. Stoll, Hartford, Conn.
13 *Rod Auscultation. E. Reichmann, Berlin, Germany.

8. **Test of Condition.**—For the purpose of determining the real condition or relative degree of health of an individual, Crampton has devised a condition test. The patient is directed to lie down flat on a couch with no head rest. The armlet of the blood pressure instrument is then placed around the upper arm. This should be arranged so that it bears the same relation to the heart lying as it will when the patient is standing, so that no hydrostatic error will be included. Absolute quiet is insisted on, relaxation of the muscles is necessary, and all emotional disturbances should be guarded against. The pulse rate is then taken by quarter minutes for at least four successive quarters. These should be recorded until a plateau is arrived at in which the heart is steady, the indication of which may be taken to be the point where four records show no decrease. These four records forming a minute's record should be noted for comparison with the standing rate. Without releasing the grip on the radial artery, the systolic pressure should be taken. This should be taken twice, and if any great difference is noted, a third time, and the average struck. If there is any considerable variation noted, it may be due to several disturbing factors, such as an uncomfortable position, emotional disturbances, nervous muscular contractions, holding the breath, etc., all of which should be eliminated. These items recorded, the patient is allowed to stand and the same records taken in the same way with the same precautions. It is important that the pulse rate should be allowed to fall to its standing normal after rising, for it is accelerated by the muscular act of getting up. The blood pressure also rises considerably at first (though it may fall), but it strikes a balance, as a rule, a little before the pulse rate does. Compare results and arrive at a conclusion as to the condition of the individual. The whole test takes less than five minutes. It is advisable, at first, to repeat the test and to corroborate the findings of the first examination; with little practice, however, a repetition is unnecessary. By the use of this test one can estimate the progress made in chronic cases and the value of the remedies applied. It is inapplicable to any but ambulant cases, for rest in bed interferes with it strongly. A moderate amount of rest in the run-down will increase the efficiency of the vasomotor mechanism, but long-continued rest decreases its efficiency, from disuse, to a marked extent. The fall of cerebral pressure and consequent syncope caused by even the sitting up in bed of a patient long recumbent is familiar to all. Its chief use in future will no doubt be in the diagnosis of the amount of damage to the general vitality of any hidden disease or any course of life has produced in the patient under observation for the first time, and also in the estimation of the progress made under treatment. In therapeutics it is not enough to know how a drug affects the blood pressure; the physician must know how it affects the vasomotor control. Crampton has applied this test to a number of hard-worked business and professional men with most satisfactory results. In every case it formed an accurate and reliable index to real improvement. It was very much steadier in its readings than would be expected from the apparent variations in observed condition, which were extremely variable, but it seemed to check real improvement much more positively than could be determined by observation. In one case of neurasthenia, in which a relative degree of sexual impotence was a symptom, the index followed the regaining of this function very exactly, and marked a relapse as accurately.

13. **Rod Auscultation.**—To practice Reichmann's method, a small rod of special design is applied firmly and vertically to the surface of the body, and the top of the middle finger is passed with moderate force over the rod, while it is steadied with the thumb and index finger. This friction produces, in the rod, vibrations—sound-waves—which, in accordance with well-known physical laws, are transmitted in every direction. Hence they pass also on the surface of the body, and, if sufficiently strong, into the subjacent organs, from which they are again transmitted in every direction. If then a stethoscope be placed near the rod, with the ear applied thereto, these sound waves can be heard, and a sound of a peculiarly grating character, resembling somewhat the noise produced when a finger is passed over silk or similar material, is noted. If the skin is soft and not tense, the sound waves can pass through it for only a very short distance, and likewise they can not go very far in the loose subcutaneous tissue. If they encounter an underlying contracted muscle, or,

for instance, a rib, they will naturally be transmitted into the structure, and, according to its course, continue in it, becoming audible nearly over the full extent of this muscle or rib, provided that both stethoscope and rod are placed over the same structure; an internal organ under these conditions will, therefore, not be able to influence the audibility of the sound waves. The conditions are different if a muscle or a rib does not intervene between the internal organ and the stethoscope and rod, or if either the stethoscope or the rod is applied so as to avoid a muscle or rib. In this case, then, it is impossible for the sound-waves to be transmitted through the latter from the rod to the stethoscope, and the examination of the internal organ is no longer disturbed thereby. Since the sound waves are transmitted in every direction in this internal organ, the sound produced by them can be heard as long as stethoscope and rod are over this organ, and cease to hear them when one or the other has left the organ; this for the reason that the waves being reflected at the boundary of the organ, at the serous covering, are thus prevented, or nearly so, from passing to an adjacent organ; hence, the sound that is heard becomes more dull and now resembles the noise produced by a finger passing over rubber or similar substances. Small organs are but little suited for rod auscultation, as transmission through the skin and the surface of the body is most likely to interfere with the examination. The heart also, in most instances, can not be outlined with sufficient exactness by this method. This is more especially true of the right and left boundaries of the heart because transmission through the ribs too often plays a disturbing part and vitiates the findings. The upper and the lower boundaries are more readily determined. It is much easier to examine the lungs. By means of rod auscultation it is possible also to differentiate the individual lobes of the lungs, provided they do not coalesce with one another. It is equally possible to determine the boundaries of the liver readily and accurately if the abdominal muscles are not tense, and especially when that organ is somewhat hard, and firm organs better conductors than flaccid and soft ones. The method is of special value in cases in which the diagnosis is somewhat in doubt and in which it becomes a matter of importance to clear this up, as, for instance, whether an abdominal tumor that has been definitely made out has its origin in the liver or is merely situated in its vicinity—a point that can not always be determined by palpation and percussion. The change of the friction sound in this case is bound to occur very distinctly between liver and tumor if the tumor does not coalesce with the liver; the change will not take place if it does so coalesce; the sound waves in the latter instance encounter no obstacle from which they are reflected.

Medical Record, New York.

September 16.

14 *Remarks on the Diagnosis of Diseases of the Nervous System. J. Collins, New York.
15 *Case of Laryngeal Diphtheria Necessitating Intubation, Complicating Cerebrospinal Meningitis in an Adult. W. K. Simpson, New York.
16 Gall-Bladder Surgery. T. C. Kennedy, Shelbyville, Ind.
17 *The Influence of Pneumococci on the Healing of Wounds. J. W. Robinson, Bozeman, Mont.
18 Control of Tuberculosis in the Philippines. D. M. Appel, U. S. A.
19 *Aortic Reflexes. A. Abrams, San Francisco.
20 *Rôle of Trichocephalus in the Etiology of Typhoid Fever. G. Spezia, Turin, Italy.

14. **Diagnosis of Diseases of the Nervous System.**—Collins says that the reasons why nervous diseases are considered to be a strange country by the general practitioner are: (1) Because there is an inherited conviction that such diseases are extremely obscure; (2) because there is an acquired conviction that in order to unravel the intricacies of such diseases, a comprehensive knowledge of the anatomy and physiology of the nervous system is required; and (3) because many physicians do not take the trouble to acquaint themselves with the simple methods of testing for the existence of nervous disease. He explains that this is a mistaken standpoint and shows that nervous diseases, if approached with the same care that is necessary for the study of other affections, are no more difficult or obscure than most medical problems. Any medical man who will free himself from his preconceived ideas of the difficulties of the subject will have no more difficulty in dealing satisfactorily with nervous diseases than he has with any other disease in the province of internal medicine. The diagnosis of the commoner and more important nervous maladies is analyzed at length, for each condition, and illustrative cases are cited.

15. **Laryngeal Diphtheria Complicating Cerebrospinal Meningitis.**—Simpson reports a case of laryngeal diphtheria which existed at the same time with cerebrospinal meningitis and did not modify the disease. This occurred at the time when the attempt was being made to modify the cerebrospinal meningitis by the use of diphtheria antitoxin. The patient had all the classical symptoms of cerebrospinal meningitis, when she began to complain of hoarseness, croupy cough and dyspnea. There was no membrane in the pharynx or on the tonsils, but pieces of membrane were coughed up in which the Klebs-Loeffler bacillus were found, in pure cultures. Intubation became necessary, and antitoxin was administered with good effect on the diphtheria, but without modifying the symptoms of the other disease in any way. Lumbar puncture was also performed on three occasions. The case went to irregular heart action and high temperature, and the patient developed pneumonia with fatal result.

17. **Influence of Pneumococci on Wound Healing.**—Robinson describes cases in which severe infections with pure cultures of pneumococci went on to a very favorable outcome. He concludes that (1) The pneumococci, if alone, cause little inflammatory reaction in the healing of wounds. (2) Possibly, in surgical diseases caused by pneumococci, some protective substance is formed that ameliorates the symptoms, as occurs in the crisis of a pneumonia. (3) In the treatment of a pus case care should be used to prevent a mixed infection, as healing is much more apt to be rapid and smooth if only one variety of bacteria is present.

19. **Aortic Reflexes.**—Abrams considers the aortic reflexes of great importance in medical diagnosis. To get these reflexes the palm of one hand is applied closely to the spinous processes, while the other clenched fist is used as a percussion hammer, using sharp, vigorous blows. For the reflex of dilatation he concusses the spinous processes of the eighth, ninth, tenth, eleventh and twelfth dorsal vertebræ. Then he quickly percusses the region of the thoracic aorta, and the course of that vessel is easily defined. This is a curved line beginning at the right sternal line in the middle of the first intercostal space, and ending at the point of insertion of the first rib to the sternum. The highest point is about 5 centimeters from the anterior thoracic wall, and the beginning 2 centimeters from it. Concussion of the seventh cervical vertebra causes aortic dullness to evanesce at once, as a result of the cause there is an inherited conviction that such diseases are fairly constant but variable in duration.

20. **Trichocephalus in Typhoid.**—Spezia made observations in 19 cases of typhoid, in 17 of which he found eggs of trichocephalus in the feces. In other diseases of the gastrointestinal tract these eggs are rare. The author believes that the trichocephalus inflicts wounds on the intestines, which permit of the entrance of the *Bacillus typhosus* in the intestinal wall. In view of these facts, it will be necessary, in typhoid fever, to use disinfectants capable of dissolving the resistant covering of these eggs, as well as of destroying the bacillus of Eberth; such, the author holds, are concentrated solutions of potassium and sodium salts.

Boston Medical and Surgical Journal.

September 7.

21 *Causes of Disability After Fractures of the Lower Leg and Ankle. F. J. Cotton, Boston.
22 Applied Anatomy of the Frontal Sinus. H. F. Mosher, Boston.
23 Study in Abnormal Psychology. G. M. Parker, New York.

September 14.

24 Modern Conception of Tuberculosis of the Skin. C. J. White, Boston.
25 *Clinical and Laboratory Study of the Therapeutic Value of Hydrochloric Acid in Diseases of the Stomach. R. F. Chase, Boston.
26 Ocular Vertigo of Interest to the General Practitioner. B. P. Croft, Greenfield, Mass.

21. **Causes of Disability After Fractures of Leg and Ankle.**—As the result of a careful study of 47 cases, Cotton found

that the chief causes of disability in leg and ankle fractures are: (1) Failure to preserve the line of the limb—and consequent static trouble. (2) Mechanical damage to the ankle joint. (3) Static trouble from overload on atrophied muscles—apart from any malposition. (4) Contractures. The tendency to malposition must be guarded against, first by careful study of lesions and by careful reduction; second, by careful review (checked, if possible, by *x*-rays) of the result of reduction and of the present condition—a review to be made after, not over two or three weeks, when swelling and spasm are gone, yet while correction of mistakes is still easy. Later, operations are the only resort—undesirable, yet they are often of great service. The pure static troubles independent of malposition are usually readily relieved by careful plate support. Cotton believes that the contractures are avoidable in all cases unless there is long-continued tendency to recurrence of deformity or delayed union or extreme trauma affecting soft parts as well as bone. In his opinion they call for treatment directed toward preserving flexibility and nutrition of the muscles, instituted before fixation has rendered the early spastic changes permanent. This means that rigid plaster bandages must be made removable at from two to four weeks, not at three months, and that exercises without weight bearing must be performed persistently under proper supervision. If this is not done, stiffness of ankles and less often of the knees must be expected as one of the great factors of disability.

25. **Therapeutic Value of Hydrochloric Acid in Stomach Affections.**—Chase gave 20 minims of HCl in 90 c.c. of water, two or three times, at fifteen-minute intervals, after an Ewald test breakfast. One hour after the meal was given the gastric contents were withdrawn and the acidity tested. Four tests were made. The total acidity was always increased, and in three of the four tests, free HCl was present in appreciable amounts. In one test it was absent. From 15 to 25 minims of HCl were given in 99 c.c. of water three times within an hour after the ingestion of a large meat sandwich, and 300 c.c. of water. Nine tests were made. In from sixty to seventy minutes after the meal was given, the total acidity of the gastric contents was always found increased, but free HCl was never present. Chase also found that the long-continued use of large doses (45 drops, three times daily), of HCl diminished the total acidity. He believes that the HCl has a depressing influence on the gastric acidity which is not generally recognized. Peptic digestion, however, is accelerated by the use of HCl, although in certain conditions large doses in some manner retard peptic digestion. He is of the opinion that while large doses of HCl often alleviate certain symptoms, they never improve any function of the stomach.

New York Medical Journal.

September 16.

27 The Food Factor in Asthma: Hyperpyremia. F. Hare, London.
28 *Floating Kidney Due to Colon Displacement. S. Chandler, Philadelphia.
29 *Epilepsy and Eyestrain. W. P. Spratling, Sonyea, N. Y.
30 *Convenient Method of Leucocyte Counting. E. L. Gros, Paris, France.
31 Formative Period of Early Infancy: Its Opportunities. E. Campbell, Cincinnati.
32 Mixed or Secondary Infection, with Some Considerations as to Treatment. E. A. Gray, Chicago.
33 Study of Masked Rheumatism. (Continued.) G. F. Souwers, Germantown, Pa.
34 Renal Distention. A. M. Wose, Syracuse, N. Y.
35 Hints on the Hygiene of Infancy. L. Johnson, Washington.

28. **Floating Kidney Due to Colon Displacement.**—A case of this kind is reported by Chandler. The left kidney was normal and in position. The right kidney was absent from its position. The small intestines and appendix were apparently normal, but the entire first portion of the large intestine was movable, and adherent to it was a tumor believed to be the absent right kidney. When the kidney space was opened it was impossible to find the kidney, yet it was readily felt in the anterior abdominal cavity. It was judged, therefore, to be free in this cavity, attached to the ascending colon, and this proved to be true. The intestine, in being displaced during pregnancy two years previously, had drawn the kidney with it, and gradually the peritoneum had closed behind the kidney, forming a pedicle carrying the vessels and ureter.

29. **Epilepsy and Eyestrain.**—Spratling cites one case for the purpose of calling attention to the fact that the wearing of glasses seemed to repress the epileptic attacks in a manner not dissimilar to the repression that is often secured by the use of bromids, and that like bromids, while they may mitigate the disease, they are without power to cure. Spratling says that he has yet to see a case of genuine epilepsy cured by correction of ocular abnormalities or by the use of bromids alone.

30. **Convenient Method of Leucocyte Counting.**—Gros designates this as the acetic acid and gentian violet method. The solutions used are: (1) Aqueous solution acetic acid, 5 to 1,000—30 grams; (2) saturated alcoholic solution of gentian violet, 10 drops. The best instrument to use for the count is Hayem's hematimeter. In addition, one must have a pipette for measuring 20 cm. of blood. Also one for measuring .5 c.c. of the acetic-gentian-violet solution. Another necessary accessory is a small glass-stoppered tube, containing about 1 c.c., in which the mixture is kept to be examined either at the bedside of the patient or at the doctor's office any time between one-half hour to three hours after the blood has been drawn. The acetic acid dissolves the red blood corpuscles, and the leucocytes alone appear in the microscopic field. The gentian violet is not strong enough to color strongly the whole leucocyte, but it makes the nuclei very visible and allows one not only readily to make the count, but also rapidly to determine the relative number of uninuclear and multinuclear cells.

St. Louis Medical Review.

September 16.

36 Etiology of Cancer. M. Schueller, Berlin, Germany.
37 Climate and Relapses in Pulmonary Tuberculosis. A. Dixon, El Paso, Texas.

Lancet-Clinic, Cincinnati.

September 16.

38 Perfected Surgical Treatment of Fibroid Tumors of the Uterus. L. S. McMurtry, Louisville, Ky.
39 Scarlet Fever: Its History, Symptoms, Duration, Incubation and Variation in Type. J. M. Battern, Dowington, Pa.
40 *Infantile Paralysis: Its Nature and Treatment. A. E. Sterne, Indianapolis, Ind.

40. See abstract in THE JOURNAL, Oct. 24, 1903, p. 1041.

Pacific Medical Journal, San Francisco.

September.

41 Patent Poisons for Poor People. W. Anderson, London.

Journal of Infectious Diseases, Chicago.

June.

42 *Blood in Scarlet Fever. W. Tileston and E. A. Locke, Boston.
43 Case of Hematochyluria, with Some Observations on the Morphology of the Embryo Nematode—Filaria Nocturna. W. B. Wherry and J. R. McDill, Manila, P. I.
44 Case of Pulmonary Infection with an Acidfast Actinomyces. E. E. Butterfield, Washington, D. C.
45 Bacillus Mycogenes (Bacterium Mucogenum), Nov. Spec. An Organism Belonging to the Bacillus Mucosus Capsulatus Group. R. T. Edwards, Baltimore.
46 *The Nitrate and Nitrite Content of Witte's Peptone, with Special Reference to Its Influence on the Demonstration of the Indol and Cholera Red Reactions. W. B. Wherry, Manila, P. I.
47 Occurrence of Fusiform Bacilli and Spirilla in Morbid Processes. G. H. Weaver and R. Tunnicliff, Chicago.
48 Quantitative Study of Hemolytic Serum. W. P. Manwaring, Chicago.
49 *Rôle of the Typhoid Bacillus in the Pulmonary Complications of Typhoid Fever. G. C. Robinson, Philadelphia.
50 Thermostabile, Hemolytic Precipitate from Nutrient Broth. E. O. Jordan, Chicago.
51 Comparison Between the Results of Blood Cultures Taken During Life and After Death. N. B. Gwyn and N. MacL. Harris, Baltimore
52 Contribution to the Clinical Knowledge of Texas Fever. C. C. Guthrie, Chicago.

42. **Blood in Scarlet Fever.**—The investigations made by Tileston and Locke include the study of the blood of 34 cases of scarlatina, 28 of the patients being between the ages of 2 and 10 years, 1 under 2 years, and the remaining 5 varying from 11 to 23 years. Since the patients were observed in hospital wards, it was seldom possible to make an examination of the blood previous to the second or third day, as the patients usually did not enter until the disease was well developed. On the other hand, the examinations once begun were continued until death in the fatal cases, or until the establishment of complete convalescence in those ending in recovery. Only such cases were selected as gave unmistakable evi-

dence of the disease and remained under a constant diet and treatment. In no instance was any medication used other than small doses of strychnia, and even that in but few. The blood was taken about 9.30 a. m. or 4 p. m., in order to avoid any possible influence by the ingestion of food. The authors found that the blood of scarlatina in children differs from that in adults only in proportion to the differences in normal blood at the different ages. A slight secondary anemia is the rule in all but the very mild cases, varying directly with the severity and duration of the disease. The fall in hemoglobin is from 5 to 25 per cent., and in the erythrocytes from 100,000 to 700,000 per cm. Both return to normal after a period of several weeks. A hyperleucocytosis almost invariably accompanies the disease, and runs a characteristic course. Rising abruptly from the second to eighth day (18,000 to 40,000 per cm.) the count falls rapidly for a few days, then more gradually to reach normal in convalescence, usually at the end of from three to six weeks. During the period of invasion and eruption, the polynuclear leucocytes are both relatively and absolutely increased, but decrease gradually with the fall in the leucocytes till convalescence, when they may become relatively, though never absolutely, below normal. The mononuclears take an exactly opposite course. With the onset the eosinophiles disappear entirely or are greatly reduced, to rise above normal when defervescence begins. This eosinophilia persists until late convalescence. Myelocytes are often seen in small numbers, as in all infectious diseases. Complications, with a few exceptions, exert no influence on the course of the blood. If severe, they may increase the anemia, and in a few instances (nephritis and diphtheria) may even produce a rise in the leucocytes.

46. **Nitrate and Nitrite Content of Witte's Peptone.**—Wherry concludes that nitrites, and probably nitrates also, may gain entrance to artificial media from various sources—certain waters, "peptones" and filter papers—yielding distinct reactions for nitrites with naphthylamine hydrochlorid and sulphanilic acid. A sufficient quantity of nitrites may be further absorbed, in a few days, from the laboratory atmosphere, to yield a distinct indol reaction on the addition of 0.5 c.c. of chemically pure sulphuric acid to, for example, a culture of *Bacillus coli communis* 577 grown for twenty-four hours at from 36 to 37 C. in 10 c.c. of Dunham's peptone solution, which originally contained insufficient nitrite to yield such a reaction. The cholera spirillum does not produce nitrites in nitrate and nitrite-free "peptone" solution, prepared from Witte's "peptone" dialyzed free from nitrites; and when nitrites apparently are formed, their presence may be explained by the simultaneous testing of uninoculated controls. The vermilion-colored "cholera red reaction" must be distinguished from the purple-colored "indol reaction." The production of "cholera red," by the cholera spirillum or *Bacillus coli commuis*, takes place only, under the conditions of these experiments, during the reduction of a trace of nitrates, and when formed is demonstrable as such, whether pure sulphuric acid alone or sulphuric acid and nitrite are added, although an excess of nitrite furnishes enough nitrous acid to obscure the reaction. The growth of the *Bacillus coli communis* or of the cholera spirillum in the presence of sufficient nitrite to yield the indol reaction on the addition of a pure acid alone does not influence the character of the indol formed; but if a considerable amount of nitrite be present in the medium, the further addition of nitrite yields enough nitrous acid to obscure the indol reaction. The cholera red reaction is not specific. It is recommended that media used in testing for the production of indol or cholera red be examined for nitrates and nitrites before used.

49. **Typhoid Bacillus in Lung Complications in Typhoid.**—Robinson noted carefully the clinical history and course of several cases of typhoid which succumbed with symptoms indicating a pulmonary complication. A study of the postmortem findings in these cases, as well as a review of cases recorded in the literature, lead Robinson to draw the following conclusions: The typhoid bacillus not infrequently invades the lung during typhoid fever. It may invade areas of the lung already the seat of hemorrhagic infarction and there produce abscess formation and gangrene. The organism may cause bronchopneumonia, but lobar pneumonia as a complication of typhoid fever is usually due to the pneumococcus. This organism may be present as a general infection in the circulating blood simultaneously with the *Bacillus typhosus*. It is probable that both *Bacillus typhosus* and *Bacillus para typhosus*, type *B*, can produce a massive pneumonia, lobar in type. When these organisms are the causative factors, the pneumonia is of a peculiar hemorrhagic character, which may be recognized clinically from the bloody nature of the sputum. The typhoid bacillus is not infrequently found in the sputum of typhoid fever patients with pulmonary complications. This fact should be emphasized in order that spread of the disease by this means may be prevented.

Surgery, Gynecology and Obstetrics, Chicago.

September.

53 *Conservation of the Ovaries and the Uterus in Operative Procedures on the Uterine Adnexa. Th. Tuffier, Paris.
54 Supernumerary Thyroid at Base of Tongue. D. P. Allen, J. M. Ingersoll and A. I. Ludlow, Cleveland, Ohio.
55 Appendicitis: Earliest and Complete Removal of the Appendix. J. W. Kennedy, Philadelphia.
56 *Anatomic, Experimental and Clinical Study of Acute Phlegmons of the Hand. A. B. Kanavel, Chicago.
57 Diagnosis and Treatment of Rupture of the Uterus G. Schmauch, Chicago.
58 *Intussusception. M. H. Richardson and F. W. Palfrey, Boston, Mass.
59 Management of Uterine Fibroids. B. B. Davis, Omaha, Neb.

53. **Conservation of Ovaries and Uterus.**—Tuffier pleads for the saving of the ovaries in certain adnexal diseases. His conclusions are based on 28 cases in which he has practiced conservatism. He is satisfied that the diagnosis of sclerocystic ovaries has concealed diagnostic mistakes, and has justified many useless operations. He believes that this condition is more often dependent on disturbances of ovarian vascularization than on infection, hence he removes these ovaries only in exceptional instances. His technic is as follows: The tube is attacked from the uterus toward the fimbriæ. Forceps are placed on the uterine end of the tube and another forceps without that. He incises between the two, and isolates the uterine angle with its forceps by the aid of a compress. The broad ligament is incised immediately below the body of the tube, thereby removing the tube up to its fimbriæ, carefully isolating the ovary from its salpingo-peritoneal adhesions. Hemostasis must be perfect. The uterine angles and the intrauterine in course of both tubes are destroyed with the thermocautery. The angles are then closed with deep catgut sutures, overlapped with Lembert sutures, thus isolating the uterine mucosa and preventing infection of the neighboring tissues. One extremity of the tubo-ovarian ligament is fixed to the round ligament. The abdominal wall is closed in two layers of the catgut, and the skin is united with hooks. Tuffier has operated according to this method twenty-eight times. The tubal lesions noted at the time of operation were: Salpingitis, with the exception of one case, was always bilateral. Twenty of the cases were suppurative salpingitis, four hematosalpinx, eight cystic, ten interstitial and two tuberculous. The ovaries were apparently sound in 19 cases, somewhat sclerocystic in nine cases. The uterus presented the following appearances: Retroflexed, five times; in normal position, but slightly anteflexed, twenty-three times. In all cases it was infected. If a fungus metritis be present, Tuffier advises curetting the uterus before opening the abdominal cavity. The operative mortality was 3.5 per cent.—one death in 28 cases. This patient died of a late septicemia, due to an effusion of blood in Douglas' cul-de-sac, which suppurated, and was followed by peritonitis. The two postoperative accidents observed had the same origin and the same termination. On the fourth and fifth days the patients had a slight elevation of temperature, some pain, some nausea, some vomiting. Vaginal touch showed that there was an induration of the posterior cul-de-sac. In both cases the posterior cul-de-sac was incised, relief was immediate and cure was complete. Of twenty-eight patients, fifteen have been traced. One suffered some pain despite her regular menses, but she had a tuberculous salpingitis, diagnosed by inspection and by the microscope. Tuffier performed an abdominal panhysterectomy, and found the uterus in place and the left ovary bound to it by a distinct liga-

ment. The right ovary had been removed, the orifices of the tubes were closed and covered with peritoneum, but the whole surface presented tuberculous granulations. One patient had fungus metritis, and had to be curetted. She is now in perfect health. With the exception of these two, all the patients have been remarkably benfited by the intervention.

56. **Study of Acute Phlegmons of the Hand.**—Kanavel presents the results of a most detailed study of fascial space inspection of the hand undertaken for the purpose of demonstrating a means of shortening the course of treatment of pus infections of the hand and producing more fortunate results. Since making these investigations, clinical experience has shown that the course of many cases may be shortened, and that better results may be obtained by taking into consideration the facts demonstrated. The length and thoroughness of the paper prohibits the making of a short abstract, but as a result of this investigation the following facts may be stated: There are five great spaces, with their tributaries, in which pus can accumulate. First, the dorsal subcutaneous, which is an extensive area of loose tissue, without definite boundaries, allowing pus to spread over the entire dorsum of the hand. Second, the dorsal subaponeurotic space, limited on its subcutaneous side by the dense tendinous aponeurosis of the extensor tendons, on the deep side by the metacarpal bones, having the shape of a truncated cone, with the smaller end at the wrist and the broader at the knuckle. Laterally the aponeurotic sheet shades off into the subcutaneous tissue. Third, the hypothenar area, a distinctly localized space. Fourth, the thenar space, occupying, approximately, the area of the thenar eminence, to the flexion adduction crease of the thumb, not going to the ulnar side of the middle metacarpal. It should be remembered that this space lies deep in the palm, just above the adductor transversus. Fifth, the middle palmar space, with its three diverticula below along the lumbrical muscles, limited by the middle metacarpal bone on the radial side, overlapped by the ulnar bursa on the ulnar side, and separated from the thenar space by a partition which is very firm everywhere except at the proximal end, where it is rather thin. A small isthmus can be found leading from the proximal end of the space under the tendons and ulnar bursa at the wrist up into the forearm. Kanavel summarizes his paper as follows: 1. There are certain well-defined, uniform spaces on the fingers, palm, and dorsum of the hand in which pus can accumulate. 2. There are definite anatomic channels by which infection arising in a given spot will extend to certain of these spaces, while certain other spaces will remain uninvolved; hence the diagnosis of the position of the pus is simplified and the proper site for the incision determined. 3. There are definite anatomic channels by which pus can be spread from the uniform spaces mentioned, and when this occurs the position of the pus can be prognosticated. 4. The boundaries of the fascial spaces having been determined, it is readily seen that in some of these the incision for evacuation must be made at definite spots, otherwise important structures may be injured, or by ill-advised incisions adjacent spaces may be opened at the same time, and a spread of the infection favored to parts of the hand that would not become involved without this unfortunate surgical procedure. 5. It can be readily understood why, in certain cases, the infection has persisted for weeks and months after apparently opening the pus pocket, since diverticula and intermediary chambers have not been taken into consideration.

58. See abstract in THE JOURNAL, July 29, 1905, page 350.

Journal of Nervous and Mental Diseases, New York.

September.

60 *Acute Anterior Poliomyelitis in a Youth. T. A. Hoch, Worcester, Mass.
61 Epileptiform Attacks During the Course of Dementia Præcox. P. Masoin, Belgium
62 *Fracture of the First, Second and Third Dorsal Vertebræ; Seven Other Fractures; Laminectomy. G. Hinsdale, Hot Springs, Va.
63 Small Round Cell Sarcoma of the Spinal Column. M. A. Bliss, St. Louis.
64 Family Atrophy of the Peroneal Type. G. L. Walton, Boston.

60. **Acute Anterior Poliomyelitis in a Youth.**—Hoch cites the case of a strong and apparently healthy boy, who after a few days of general indisposition suddenly developed a flaccid paralysis beginning in the leg and within twenty-four hours spreading to the arms. These phenomena were accompanied by a rise in temperature. After a brief acute stage, gradual but slight improvement took place. After thirteen weeks death ensued from pneumonia. The onset of the disease was sudden and there was no history of preceding infectious disease or of exposure.

62. **Paraplegia from Fracture of Upper Three Dorsal Vertebrae.**—Hinsdale's patient sustained ten fractures, including the first, second, and third dorsal vertebræ, the sternum, right clavicle, right radius, left elbow-joint; a compound fracture of the right ankle joint; fracture of the left fibula; dislocation of the left radius at the wrist; fracture of the nose and a lacerated wound of the right brow. During the operation of laminectomy on the second and third, and a part of the fourth dorsal vertebræ, it was found that the arches of these vertebræ were impacted as well as fractured. The fragments were lifted out without much use of the bone forceps, except for trimming. It is now four years since the operation and the patient's condition is a very satisfactory one. She can take long drives and does not show fatigue or any tendency to weakening of the spinal column. She is able to walk with assistance.

Interstate Medical Journal, St. Louis.

September.

65 *Operation in Hypertrophied Prostate. H. G. Mudd, St. Louis.
66 Study of Thirty Cases of Chronic Non-Tuberculous Joint Disease Occurring in Adults, with Special Reference to Some Cases of Doubtful Identity. H. W. Jones, St. Louis.
67 *Considerations on the Treatment of Diabetes Mellitus. R. W. Webster, Chicago.
68 *Congenital Enterocyst. P. Y. Tupper, St. Louis.

65. **Operation in Hypertrophied Prostate.**—Mudd discusses the time for operative interference and the choice of methods.

67. **Treatment of Diabetes Mellitus.**—Webster calls attention to the dangers and fallacies of an exclusive proteid diet, as well as those of a diet containing a minimum of carbohydrate and an excess of fat. A proper balance of these constituents is as vital to a diabetic as to a normal being, and must be as accurately and as scientifically calculated as possible, if good results are to follow. The dangers of increased glycosuria and acidosis can best be fought by a properly regulated diet; hence every effort should be made to find out just what diet is best suited to the case under treatment. Webster believes that the old diet tables, which did good service in the past, succeeded not because of, but in spite of their characteristics. To cut off carbohydrates to the point of exclusion may be homicidal in some cases, while in others it may be a necessity. The treatment is long and tedious, and if scientifically carried out will yield satisfactory results. It is necessary, however, that the physician should possess a thorough knowledge of the composition of foods, of their absorption, metabolism and excretion. Regarding the signs of approach of coma, Webster advises a very careful examination of the urine for increased ammonia and an administration of $NaHCO_3$ whenever the relation of ammonia nitrogen to total nitrogen equals 10 per cent. or over. Such an excretion means an almost certain danger of coma and should be carefully watched.

68. **Congenital Enterocyst.**—Tupper reports a case of this kind occurring in a girl, aged 13. At birth the child seemed strong and natural in every way, except for the existence of a large sac containing fluid that occupied and protruded from the region of the inferior pelvic outlet. This mass was about four or five inches in its greatest transverse diameter and about 7 or 8 inches in its vertical diameter. On manipulation and pressure the fluid could not be displaced to any extent from the sac, nor were any symptoms referable to the central nervous system produced by such pressure. The sac protruded posterior to the rectum and forced this organ and the urogenital tract firmly forward under the pubic arch. When the child was 3 days old the cyst was tapped. It was tapped a second time during the first year of her life. After this there was no great reaccumulation of fluid, the cavity continuing to discharge passively for a time through the trocar opening. At 11 years of age the growth showed irritation from pressure and interfered with the sitting posture, unless the child sat

perfectly upright. The mass was removed by making anterior and posterior flaps extending transversely across its base. At the site of section the original cavity of the cyst had been completely obliterated. The tumor did not form again.

Medical Fortnightly, St. Louis.

September 11.

69 *Practical Suggestion Respecting the Removal of Foreign Bodies from the Larynx. Illustrated by a Case of Cockle-Burr on the Vocal Cords. R. Barclay, St. Louis.
70 Points from General Practice. M. E. Fitch, Philadelphia.
71 Radio-Rectal Dilators—Radio-Urethral Sounds. H. Robarts, St. Louis.
72 Relation of Man to Nature. (Continued.) A. S. Ashmead, New York.
73 *Hemorrhagic Diathesis. C. P. Frantz, Burlington, Iowa.

69. **Removal of Foreign Bodies from Larynx.**—Barclay calls attention to the immediate difficulty with which one may have to contend in attempting forcibly to remove a foreign body, especially a cockleburr, from the larynx, that of the intense reflex laryngeal spasm which may be excited thereby against the sharp spines of the cockleburr. In attempting the removal of such a foreign body, Barclay invokes the aid of an antagonistic reflex—a reflex not only antagonistic to, but far more imperious than that of the dreaded laryngeal spasmodic reflex—namely, that of the demand of the body for oxygen after forced, prolonged expiration. The tissues of the larynx are anesthetized with a cocain solution. The patient is instructed to attempt to phonate the vowel "a," the laryngeal mirror and the Fauvel forceps having been introduced previously. The cockleburr is seized firmly just as the patient phonates, and is held immovably until the patient grows desperate for air, when she is ordered to breathe. The larynx relaxes into the position of forced inspiration, and as it does so a slight wig-wag motion of the forceps will instantly bring away the cockleburr without the loss of a single one of its spines and without wounding the laryngeal tissues.

73. **Hemorrhagic Diathesis.**—Frantz reports two cases of hemophilia, one acquired and the other hereditary, which illustrate the futility of all known methods for checking hemorrhage in a bleeder after tonsillectomy.

Quarterly Journal of Inebriety, Hartford, Conn.

July.

74 Forms of Insanity Due to Alcohol, Especially in Their Medicolegal Relations. C. K. Mills, Philadelphia.
75 Present Position of the Medical Profession in Relation to Alcohol. T. B. Bart, London.
76 Inebriety and Some of the Medical Problems of Alcohol. G. H. Benton, Gowanda, N. Y.
77 Morbid Phases of Inebriety. T. H. Evans, Philadelphia.
78 New Phase of Alcoholic Unconsciousness. T. D. Crothers, Hartford.
79 Wine and the Poets—Critical Study of the Poet's Devotion to the God of Wine. J. Madden, Milwaukee, Wis.

Journal Kansas Medical Society, Lawrence.

August.

80 Railway Injury. L. H. Munn, Topeka.
81 Traumatic Neuroses. W. S. Lindsay, Topeka.
82 Borderland of Neuropsychoses. C. C. Goddard, Leavenworth.
83 Hyperacute Mania. T. C. Biddle, Topeka.
84 Exophthalmic Goiter. S. S. Glasscock, Kansas City, Kan.
85 Psychics in the Practice of Medicine. P. S. Mitchell, Iola.
86 Skin Therapeutics. H. Wilkinson, Kansas City, Kan.

Detroit Medical Journal.

August.

87 Alfred Bernard Nobel. F. S. Sherrill, Detroit.
88 Emil Adolph Behring. G. L. Kiefer, Detroit.
89 Etiology of Diabetes. S. C. Dickerson, New Bedford, Mass.
90 Case of Diabetes Insipidus. M. A. Fechheimer, Detroit.

Alienist and Neurologist, St. Louis.

August.

91 Outlines of Psychiatry in Clinical Lectures. C. Wernicke, Breslau.
92 The Feeble-Minded Child, Physical and Physiologic Problems. M. W. Barr, Elwyn, Pa.
93 Dyspepsia Considered as a Brain Disease. C. H. Hughes, St. Louis.
94 Early American Description of Astasia Abasia. C. F. Taylor, New York.
95 Mixoscopic Adolescent Survivals in Art, Literature and Pseudo-Ethics. J. G. Kiernan, Chicago.

Archives of Physiological Therapy, Boston.

August.

96 Electro-Therapeutics in Chronic Maladies. J. H. Kellogg, Battle Creek, Mich.
97 High Frequency Current and the X-Ray in Pulmonary Tuberculosis. O. S. Barnum, Los Angeles, Cal.
98 Deaf Mutism, Treatment by Galvanocautery with Resulting Cure. F. P. Hoover, Jacksonville, Fla.
99 Mechanical Vibration and Digestion. H. W. Barnum, Poughkeepsie, N. Y.

Annals of Gynecology and Pediatry, Boston.

July.

100 **Insanity Precipitated by Pelvic Disease in the Female.** R. R. Huggins, Pittsburg, Pa.
101 Total Absence of the Vagina, and Its Surgical Treatment. Dr. Vautrin, Nancy, France.
102 Suppression of Urine After Diphtheria. F. A. Hubbard, Taunton, Mass.

Journal of Nervous and Mental Diseases, New York.

August.

103 Brain Tumors; Study of Clinical and Postmortem Records Bearing on Their Operability and Symptomatology. G. L. Walton and W. E. Paul, Boston.
104 Experimental Study on the Regeneration of Peripheral Nerves. S. D. Ludlum, Philadelphia.
105 Importance in Clinical Diagnosis of Paralysis of Associated Movements of the Eyeballs (Blicklaehmung), Especially of Upward and Downward Associated Movements. W. G. Spiller, Philadelphia.

Journal Medical Society of New Jersey, Newark.

August.

106 Surgical Treatment of Chronic Bright's Disease. A. Marcy, Jr., Newark.
107 The Trained Nurse and the Doctor. E. J. Ill, Newark.
108 Modern Neurology. R. C. Newton, Montclair.
109 Surgical Diagnosis. F. D. Gray, Jersey City.
110 Physical Education Versus Physiology. G. O. Brewster, Grantwood.
111 How to Modify and Abort Measles. E. B Silvers, Rahway.

New York State Journal of Medicine.

August.

112 Therapeutic Value of Antitoxic Sera. H. T. Marshall, Baltimore, Md.
113 Reasons Why We Should Dispense. G. A. Chapman, Glens Falls.
114 General Tuberculosis Problems. G. W. Goler, Rochester.
115 Feeding in Acute Diseases. A. H. Baker, Elmira.
116 Pelvic Infection, Including Pyosalpinx and Pelvic Abscess. J. F. Myers, Sodus.
117 Etiology and Pathology of Arteriosclerosis. G. S. Towne, Saratoga Springs.
118 Conservative Surgery of the Abdomen. D. C. Moriarta, Saratoga Springs.
119 Fads in Surgery. H. Lilienthal, New York.
120 Accidents of Anesthesia. S. O. Goldan, New York.
121 Satisfactory Anesthesia of Short Duration. P. Le Breton, Buffalo.
122 Respiratory Prophylaxis. P. F. Sondern, Rochester.
123 Official Surgery—Its Absurdities, Philosophy and Merits. H. E. Hayd, Buffalo.
124 Hydatid Cyst. J. E. Welch, New York.

Oklahoma Medical News-Journal.

August.

125 Quacks and Quackery. J. O. Davis, Oklahoma City.

Canada Lancet, Toronto.

August.

126 Simple Ulceration of the Stomach and Duodenum. F. M. Marlow, Toronto.
127 Bronchopneumonia—Contrast Between Urban and Rural Results. J. Biggard, Tillsonburg.
128 Surgical Treatment of Chronic Nephritis. H. Howitt, Guelph.
129 Methods of Studying Affections of Heart. A. J. Mackenzie, Toronto.
130 The Nurse: Her Place and Equipment. J. Hunter, Toronto.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 2.

1 *Educational Number.

The Lancet, London.

September 2.

2 *Students' Number.

1 and 2. **Educational Numbers.**—These issues of the *British Medical Journal* and the *Lancet* contain information for the prospective medical student and the recent graduate. They discuss the financial outlook of the profession of medicine; the profession from the intellectual, ethical and social standpoint; the choice of a medical school; the cost of a medical education; suggestions for the benefit of the medical student as to the books he is likely to find most useful in the course of preparation for his examinations; the course of professional training through which the medical student must pass; the regulations of the general medical college and the medical examining bodies in the United Kingdom; the facilities of the various medical colleges, universities, and hospitals, and such other information as is likely to prove of interest. A statistical study, such as is given annually by THE JOURNAL, A. M. A., is not undertaken.

The Practitioner, London.

September.

3 *Enlarged Prostate, Its Nature, Smptoms and Treatment. C. Wallace.
4 Incision of the Tympanic Membrane. J. G. Connal.
5 Hydrocephalus and Posterior Basic Meningitis. (Concluded.) O. Hildesheim.
6 *Ano-Rectal Ulceration. F. C. Wallis.
7 *Remarkable Collection of Foreign Bodies Removed from the Stomach. H. H. R. McLeod.
8 Treatment of Venereal Diseases in the Services. P. N. Randall.
9 Value of Pain in Gynecologic Practice. C. Lockyer.
10 Needle in Hand. S. Hastings.
11 *Cultivation of the Parasites of Smallpox and Vaccinia in Vitro. W. E. DeKorte.

3. **Enlarged Prostate.**—Wallace presents a very detailed study of prostatic enlargement, discussing, in turn, the comparative anatomy of the gland, its development and growth in man, functions, external characteristics, structure, the nature of enlargements and their clinical history and treatment. Prostatectomy is the operation favored by Wallace.

6. **Ano-rectal Ulceration.**—This is the term applied by Wallis to a condition constantly found in the lining membrane of that part of the bowel which lies between the anus and the internal sphincter. This condition Wallis believes to be the initial cause of many of the ordinary rectal ailments, of genuine pruritus ani, fissure in ano, fistula, and also many of those distressing cases of infected ulceration of the rectum, commonly ascribed to syphilis. The lining membrane of the proctodeum is neither skin nor mucous membrane; hence any lesion occurring in this area has a small chance of recovery, (1) because of the scanty blood supply, (2) because of the constantly altering dimensions, and (3) because of the contents of the intestine which are constantly passing over it. Although these abrasions not infrequently occur at two or three different places, the commonest situation is just to one side or the other of the dorsal mid-line. They become covered with granulation tissue, and are practically chronic ulcers which exude in irritating secretion causing pruritus ani. The abscesses discussed by Wallis are the subcutaneous, submucous, ischiorectal, and pelvirectal. He advises opening the ischiorectal abscess outside the sphincter, making one common cavity of existing pockets, draining by a tube through a free skin incision, but not dividing the external sphincter. When the abscess is of the submucous variety, he dilates the opening, passes a hooked director through it and incises the skin over this, dividing everything lying above the director. Thus the external sphincter is divided and the abscess cavity can be thoroughly explored and treated, without materially damaging the mucous membrane. The same method should be adopted in the treatment of pelvirectal abscesses, care being taken not to interfere with the internal sphincter, the levator ani muscles or the mucous membrane. Infective proctitis is treated as follows: The bowels are thoroughly emptied, and at the same time some form of intestinal antiseptic is given by the mouth. The rectum is washed out daily with some antiseptic solution for a week or more, the patient being kept in bed. As soon as the patient's condition permits, the affected bowel is completely excised, and the healthy gut brought down and stitched to the anal margin.

7. **Foreign Bodies in Stomach.**—Following the amputation of a thumb, the patient in question, a woman, aged 30, became very much depressed in spirits, but did her housework as usual. Finally, she began to complain of pain above and to the left of the umbilicus, where a very tender, rounded swelling was evident. The tumor became more pronounced day by day and there was some fever. Alarmed at the suggestion of an operation, the patient confessed that for three weeks she had been swallowing various articles with suicidal intent. A small abscess had developed in the left rectus sheath, and on opening the abscess it was found to communicate directly with the stomach. This opening was enlarged, and by means of a blunt-dressing forceps MacLeod removed a large number of hair-pins, sewing and darning needles, safety pins, horse-shoe nails, and ordinary nails, tacks, screws, pins, coins, fragments of glass, chalk, etc. The patient died of exhaustion six days after the operation.

11. **Cultivation of Smallpox and the Vaccinia Parasites In Vitro.**—DeKorté found that the parasites of smallpox and vaccinia will grow and multiply in pure culture in the vitreous humor of the rabbit's eye which is obtained in a sterile condition by withdrawing it from the eye of a freshly killed rabbit with a sterile hypodermic syringe. Care should be exercised in the operation to procure the medium in a clear condition. It is also advisable to collect it in a vessel in which it can be centrifugalized, the object being to free it from any cellular element which might obscure the issue. The clear supernatant fluid is pipetted off and distributed in small tubes, capped with rubber sheeting to prevent subsequent evaporation. This sterile medium is inoculated with a fair quantity of the infected material which has previously been ascertained by subculture in gelatin and broth to be free from contaminating organisms.

Journal Royal Army Medical Corps, London.

September.

12 *Report of Commission Appointed by the Admiralty, the War Office and the Civil Government of Malta, for the Investigation of Mediterranean Fever Under the Supervision of an Advisory Committee of the Royal Society. (Continued.) W. H. Horrocks.
13 Preliminary Note on the Susceptibility of Goats to Malta Fever. T. Zammit.
14 *Preliminary Note on Goats as a Means of Propagation of Mediterranean Fever. W. H. Horrocks.
15 Prevalence of Enteric Fever in Pietermaritzburg. R. J. S. Simpson.
16 Gunshot Injuries of the Spine. S. F. Lougheed.
17 Case of Kala Azar. J. C. B. Statham.
18 Some of the Blood-Sucking Insects of the Mediterranean Littoral. H. Ross and G. M. Levick.
19 *Value of Copper as a Means of Purifying Drinking Water. C. E. P. Fowler.
20 Additional Plea for the Recruit. E. Fairland.

12. **Mediterranean Fever.**—Horrocks adduces experimental evidence to show that the *Micrococcus melitensis* when present in dry dust is capable of being absorbed by monkeys. The path of absorption may be through the nares, throat, respiratory passages, and alimentary canal. When present in food it is also taken into the system of monkeys; here, again, the path of absorption may be through the throat as well as through the mucous membrane of the alimentary canal. When transmitted through an unbroken mucous membrane the process of absorption is comparatively slow, and under these conditions the wave of fever appears to be prolonged. The long and variable incubation period observed in monkeys infected through an unbroken mucous membrane is frequently observed in man infected under natural conditions. When the *Micrococcus melitensis* is absorbed through a crack in a mucous membrane or in the skin, or is injected subcutaneously, the absorption is rapid, and the incubation period in monkeys varies from five to seven days. The curve of fever is characterized by a rapid rise usually followed by a rapid fall. These acute infections have also been observed in man infected under the same conditions, but the period of incubation appears to be longer in man than in the monkey. Healthy monkeys may become infected by urine secreted by monkeys suffering from Mediterranean fever, just as in the case of man; the *M. melitensis* is excreted in the urine of infected monkeys. And it seems probable that healthy monkeys walking in the infected secretion convey that specific microbe into the mouth by means of the paws. Infection by means of urine excreted by patients with Mediterranean fever readily explains the cases of Mediterranean fever which appear to rise spontaneously in hospitals. In the absence of specific knowledge as to the mode of excretion of the *M. melitensis* from the human body, sufficient care has not been taken hitherto to sterilize bedpans, urine bottles and sheets soiled by these patients. There is no evidence that Mediterranean fever can be contracted by contact with cutaneous surfaces uncontaminated by urine.

14. **Goats and Mediterranean Fever.**—Horrock's investigations on goats as a means of propagation of Mediterranean fever show that some of the goats in every herd examined were suffering from that disease. The *M. melitensis* is exuded in the milk in enormous numbers when the disease has been present sufficiently long to cause a change in the physical character of the fluid. It is also excreted in considerable numbers even when the animals are in "full milk," and no changes have occurred in either the physical or chemical characters of the milk. The *M. melitensis* is also excreted in the urine of

goats suffering from Mediterranean fever, but up to the present it has only been found when the disease has existed for some time and physical changes have occurred in the milk.

19. **Value of Copper for Purifying Drinking Water.**—According to Fowler, a contaminated water standing for twenty hours in a copper vessel, even though containing a large quantity of copper foil, is not rendered safe for consumption. The time limit of twenty hours is the very extreme one for such a process to be of any practical value, as the water treated one day should be available for use early the next morning. Copper sulphate will act as a fairly efficient germicide of intestinal organisms in twenty-four hours up to 1 part per 60,000 parts with a clear water; up to 1 part per 30,000 parts with a somewhat turbid water, and up to 1 part per 10,000 parts with a foul water. Copper sulphate at 1 part per 10,000 can not be tasted, but it gives a bluish opalescence to the water; at 1 part per 30,000 there is a faint turbidity and a slight trace of blue coloration; at 1 part per 60,000 there is a very slight turbidity, but no blue color. Copper sulphate at 1 part per 60,000 parts of water is just over 1 grain per gallon, and it is a question whether the consumption of such an amount might not have some harmful effect on the consumer. If a man drinks 2 pints a day, he would seem to be taking one-fourth of a grain of the copper sulphate daily. The dose as an astringent is from one-half to 2 grains (B. P.)

Presse Médicale, Paris.

20 (No. 64.) La cellule interstitielle du testicule. A. Branca.
21 (No. 65.) *Valeur diagnostique, pronostique et thérapeutique de la ponction lombaire chez le nouveau-né. L. Devraigne.
22 *Distension cardiaque et angine de poitrine. J. P. Tessier.
23 (No. 66.) *Les injections d'eau de mer en thérapeutique infantile (sea water). L. G. Simon and Pater.
24 *Anévrisme artério-veineux du triangle de Scarpa. L. Latour.
25 (No. 67.) *How to Install an Infant Consultation.—Comment installer une consultation de nourrissons. V. Bué.
26 L'acidité des urines à l'état physiologique. H. Labbé.
27 (No. 68.) *Le laboratoire le plus haut situé d'Europe (on the summit of Mont Blanc). R. Bayeux.
28 Les infections paratyphoides dans l'ouest de la France. E. Sacquépée and F. Chevrel.
29 La vibration du coeur (of heart). C. Vermeulen.
30 (No. 69.) Gymnastique de la respiration et du maintien. P. Desfosses and G. Santos.
31 *Treatment of Infants of Tardy Growth.—Traitement des nourrissons en état de croissance retardée. E. Terrien.
32 (No. 70.) Le dispensaire antituberculeux de la Ville de Paris. M. Letulle.
33 *Le régime alimentaire des épileptiques. J. Voisin and R. Voisin.
34 (No. 71.) *La vaccination anticholérique et antipesteuse de W. M. Haffkine.

21. **Lumbar Puncture in the Newly Born.**—Devraigne relates that he has been long impressed with the constancy of meningeal hemorrhage in cases of cyanosis, convulsions, coma, stiffness of the neck, temperature and contractions occurring in a new-born, apparently asphyxiated infant. Lumbar puncture in such cases reveals the hemorrhage and the hopelessness of attempts to revive the child in the severer cases. Experience has demonstrated that lumbar puncture has been able to effect a cure in certain cases of meningeal hemorrhage in the adult, and he became convinced that it might be applicable likewise for the same condition in the newly born. In May, 1904, a child, after forceps delivery, presented the classical syndrome of meningeal hemorrhage, and about 3 c.c. of bloody fluid was withdrawn by lumbar puncture. The child improved almost at once, and a second puncture two days later showed merely a pinkish fluid. The improvement continued, and a third puncture was made the seventh day after birth, and the fluid was scarcely tinted. The child was cured. Several other infants have been treated in the same way with equally favorable results. In another case the fluid was almost entirely blood, and the unfavorable prognosis was confirmed by the death of the child the next day, when, as surmised, a very large hemorrhage was found. The puncture is made in the same way as in adults, but the needle should carry a wire, as it is liable to become obstructed. The needle should not be inserted for more than from 10 to 15 mm., and Bonnaire says not more than from 10 to 12 mm. The amount withdrawn should not be over 10 c.c., and he never took more than from 3 to 6 c.c. The withdrawal of the fluid reduces the pressure on the nerve centers, the diffused blood possibly acting, besides, as a toxin in the submeningeal space.

22. **Distension of the Heart and Angina Pectoris.**—Tessier thinks that mere distension of the heart may sometimes be the cause of an attack of angina pectoris. He draws a sharp distinction between distension and dilatation and outlines the treatment indicated by the former condition. The heart should be spared all but the minimum of work, and it should be stimulated. The main causes of distension of the heart are sudden aortic insufficiency and overexertion.

23. **Injections of Sea Water.**—Simon and Trousseau have given a fair trial to the therapeutic application of injections of sea water which some observers have recently lauded. In five children with tuberculosis, the injections not only failed to display any beneficial action, but rather seemed to aggravate the course of the disease. In another group of nontuberculous children, no benefit was apparent. There was generally a temperature reaction.

24. **Recovery After Removal of Large Aneurism in the Thigh.**—The sac was not entirely removed, but all the veins and arteries were ligated, not omitting a single collateral. The aneurism had developed in consequence of a bullet wound, and the patient recovered without gangrene or disturbances of any kind. Latour gave him a certificate which released him from military service, as he feared that a long march might bring on trouble again.

25. **Infant Consultations.**—Bué describes how to install a special service for healthy infants. All the mothers delivered in his maternity are urged to bring their babes back for consultation once a week at a certain hour. Records are kept of each child's weight and general condition from week to week, and if there is any interruption in normal growth the causes are sought and remedied. The education of the mothers in hygiene and in the care of their children has been of incalculable value, and the pride of the mothers as they present their healthy little ones and compare them with others has been an important factor in the fine results attained. These "consultations" are now installed in a number of French, German and Spanish cities since Budin first originated them in 1892. The advantage to young physicians to study the normal child's development is not one of the least of the benefits of the plan. Most of the "consultations" now have a milk delivery station attached, and to this feature the "consultations" owe their popular name of the *Goutte de Lait* (Drop of Milk). Only three things are necessary to install one of these, namely, scales to weigh the infants, an apparatus for sterilizing the milk, and the devoted services of some physician. The community generally donates the room or three rooms required and the expense of installment, but if sufficient funds are not realized in this way private benevolence must be solicited. The daily press will usually respond to an appeal for this philanthropic purpose. The waiting room requires merely benches, the weighing room has a table with the scales and another table for the assistants to write on, and the third room is the milk sterilizing and supply department. A record of each child is kept in a large ledger, with the details of its weight, health, etc., at each visit, and a card is given each mother each week on which is recorded the weight of the child, and whether nursing or bottle fed, and the amount of milk it is taking, this card to be presented with the child at each consultation. In the industrial centers the consultations are held on Sundays. The mothers are warned not to bring the children to these consultations if they seem sick, and each child as it arrives is hastily examined and turned away if not apparently healthy. After all the children have been weighed and registered, in turn, in the presence of the mother, the physician makes a short address to the assembled mothers, using one of the infants for a demonstration. In one town in France the mortality has fallen from 17.5 to 2.28 per cent. among the infants brought to these consultations.

27. **The Laboratory on the Summit of Mont Blanc.**—In 1893 Janssen witnessed the completion of the laboratory built on the ice at the top of Mont Blanc and was able to confirm his previous assumption that the oxygen lines in the spectrum are of telluric origin and that there is no oxygen in the sun's

actual spectrum. Switzerland now has three such laboratories, the one on Mont Rosa, where Mosso works, and Vallot's observatory, lower down on Mont Blanc. Valuable contributions to our knowledge of physiology may be expected from these elevated laboratories, but, as Bayeux remarks, a robust physique, besides scientific ardor, is required for physiologic research at these altitudes. Many are called, but few are chosen.

31. **Treatment of Infants of Tardy Growth.**—Terrien discusses the indications for buttermilk, malt soup, and Mery's vegetable soup for the feeding of children who are not developing normally, or who have just passed through an acute gastrointestinal affection. The buttermilk is slowly heated to the boiling point after addition of a tablespoonful of rice, arrowroot or oatmeal, and allowed to boil up three times, constantly stirring, then set aside to cool. The buttermilk contains large proportions of lactic acid, sugar and starch, with very little fat.

33. **Diet in Epilepsy.**—Good general hygiene and avoidance of digestive disturbances are sufficient, without any special dieting, in epilepsy, according to Voisin.

34. **Haffkine's Anticholera and Antiplague Vaccination.**—Lew concludes from the history of Haffkine's work in India that his method of vaccination renders contagion of plague three times less probable than without it, and a fatal termination two times less probable, that is, it reduces the chances of death to one-sixth of the non-vaccinated subjects. His anticholera vaccination has now established itself on such a footing that its results are no longer published any more than those of vaccination against smallpox.

Berliner klinische Wochenschrift.

35 (XLII, No. 31, July 21.) *Die bakteriologische und die klinische Diagnose bei den fibrinösen Entzündungen der oberen Luftwege. Gerber.
36 Route of Tubercle Bacilli from Mouth to Lungs.—Ueber den Weg der Tuberkelbacillen von der Mund und Rachenhöhle zu den Lungen. H. Beitzke.
37 Experimentelle Beiträge zur Lichtbehandlung (sensitizing, etc. in phototherapy). F. Schulz.
38 (No. 32.) Ein Fall von Meningokokken-Septikämie. Martini and Rohde.
39 Prospects of State Measures Against Trachoma.—Was haben wir von einer staatlichen Trachombekampfung zu erwarten? Greeff.
40 Fall von symmetrischen sarkomatösen (?) Tumoren der Schläfenregionen und der Wangen-Chlorom? (of temples and cheeks). A. Buschke.
41 *Zur Kenntnis der atypischen myeloiden Leukämie. H. Hirschfeld.
42 *Neue Reaktion zum Nachweis von Aceton samt Bermerkungen über Acetonurie. V. Frommer.
43 *Zur Pathogenese der Lungentuberkulose. F. Weleminsky (Commenced in No. 29).
44 Ueber den Prolaps der Vagina und des Uterus und seine Behandlung. E. Runge.

35. **Bacteriology of Fibrinous Inflammations of Air Passages.**—Gerber found diphtheria bacilli in more than three-fourths of his 40 cases of fibrinous rhinitis. There were no general symptoms or fever in about three-fourths of all the cases, including those with and those without diphtheria bacilli. The proportion was less in the fibrinous throat affections, not more than half of 127 patients with fibrinous pharyngitis presenting the diphtheria bacilli. He advises therapeutic injections whenever the general symptoms are severe, even when bacteriologic examinations are negative, but, on the other hand, does not advise them even when diphtheria bacilli are found if the clinical manifestations are insignificant.

41. **Atypical Myeloid Leukemia.**—Hirschfeld draws the composite picture of acute myeloid leukemia from 8 cases in the literature, and that of chronic atypical myeloid leukemia from 12 cases. He then reports a case of myeloid leukemia, personally observed, in which the blood findings were at first typical, but gradually became atypical, as he describes in detail.

42. **Test for Acetone.**—Frommer alkalinizes the urine with potassium hydrate and then adds a few drops of a 10 per cent. alcoholic solution of salicyl aldehyd (1 salicyl + 10 alcohol absol.) and heats to 70 C. (158 F.) In the presence of acetone a purple ring forms at the junction of the two fluids.

43. **Pathogenesis of Tuberculosis.**—Weleminsky has been making an extensive study of the behavior of the regional lymph glands in respect to organs infected with tubercuiosis. He has found that when the tubercle bacillus has been at work for a certain length of time in a region the lymph passages are no longer susceptible of being infected. Infection then spreads by way of the blood or by contiguity. Spontaneous infection of man is always lymphogenic. Putting these facts together has convinced him that man becomes infected with tuberculosis from without only once during his lifetime, the same as in syphilis and in other chronic infectious diseases. Almost every case of spontaneous tuberculosis in man and animals is a primary affection of the lymphatic system.

Deutsches Archiv f. klinische Medizin, Leipsic.

Last indexed page 79.

45 (LXXXIV, Nos. 1-4, Merkel Festschrift.) *Ein Fall von Darmkonkrementen (intestinal concrements). B. Naunyn.
46 *Ueber ein eigentümliches Auftreten tympanitischer Schallbezirke im Gebiet der Flüssigkeitsansammlung bei Sero- und Pyopneumothorax (resonant area in dullness). Bäumler.
47 Ueber Taenia cucumerina beim Menschen (in man). O v. Bollinger (Munich).
48 *Ueber die Heilung des tuberkulösen Pneumopyothorax. F. Penzoldt.
49 *Bemerkungen über die Behandlung der Epilepsie. A. Strümpell.
50 Ueber die epidemische Genickstarre. Ein Beitrag zur Bakteriologie und Behandlung (cerebrospinal meningitis). H. Lenhartz.
51 Fall von beiderseitiger abgeheilter Lungenspitzentuberkulose mit Bronchiektasien bei gleichzeitiger Tuberkulose des Kehlkopfes (cure of apical tuberculosis with laryngeal tuberculosis, etc.) G. Hauser.
52 Der Unterleibstyphus in der bayerischen Armee von 1874-1904 (typhoid fever in Bavarian Army). v.Bestelmeyer.
53 Ein Beitrag zur Lehre der Therapie der durch Diphtherie bedingten strikturierenden Trachealnarben. Cuopf.
54 Zur Kasuistik des Naevus vasculosus verrucosus faciei (Darier). C. Kopp.
55 *Die Laparotomie bei Peritonealtuberkulose. Göschel.
56 *Ueber essentielle Albuminurie. R. Neukirch.
57 Ueber Mitosen und atypische Regenerationen bei Nephritis. C. Thorel.
58 *Beitrag zur Behandlung der nicht karzinomatösen Pylorusstenose. F. Fraenkel.
59 *Schwere spondylitische Paraplegie, spontan geheilt unter Anwendung der Rauchfuss'schen Schwebe, die auch zur Prophylaxe des Dekubitus bei spondylitischen Lähmungen dient Schilling.
60 *Fall diffuser symmetrischer Fettgewebswucherung (lipomatosis). H. Koch.
61 *Zur Kasuistik des Sanduhrmagens (hourglass stomach). F. Goldschmidt.
62 *Beitrag zur Behandlung der Pleuritis exsudativa im Verlaufe der Lungentuberkulose. H. Doerfler.
63 Erhebungen und Betrachtungen über 10 Jahre Sterblichkeit an Tuberkulose in Nürnberg. A. Frankenburger.
64 *Ueber die Anwendung des Olivenöls bei Erkrankungen des Magens und des Duodenums (olive oil in affections of stomach, etc.). F. Merkel.
65 Fall von Milzruptur infolge Abszessbildung bei Abdominaltyphus (rupture of typhoid spleen). R. Bandel.
66 Beiträge zur frage der Ammoniak-Ausscheidung (elimination). T. Schilling.
67 *Ueber die Genese der weiblichen Genitaltuberkulose. H. Merkel.

45. **Intestinal Concrements.**—Naunyn relates that a peasant of 40 suddenly exhibited symptoms of ileus, and after extensive irrigation of the bowels passed fifty cherry stones. Ten or eleven months had passed since he had eaten the cherries. Naunyn reviews the present status of our knowledge of intestinal concrements and then describes the case of a young physician who had used for ten years a mouth wash of tincture of myrrh and ratanhia to relieve a painful gingivitis. He used the wash several times a day, especially before meals. The particles of resin in the mouth wash collected in the digestive tract and caused symptoms suggesting recurring appendicitis or perityphlitis, when, in fact, the trouble was merely irritation of the mucosa from the rubbing of the conglomerations of resin. These accumulated at the sigmoid flexure and sometimes caused slight fever, but the symptoms were always comparatively mild. The disturbances were cured by dieting to insure soft stools with as little development of gas as possible. Every development of gas is liable to entail great disturbances. This explains the severe trouble after apparently insignificant errors in diet. The case was puzzling until the discovery of the lumps in the stools, and the chemical tests revealed the presence of resin, when the patient, on inquiry, told of his mouth wash.

46. **Resonance in Area of Dullness in Effusions** in the Thorax.—Bäumler calls attention to a peculiar tympanitic

resonant area inside the limits of the dullness from accumulations of fluid or pus and air in the thorax. He has noticed it in several cases, and here describes in detail five of them. The underlying conditions were different in each, but all presented this resonant area in the midst of the area of dullness. In one it was due to a compressed strip of lung tissue adherent to the thoracic wall, in others to accumulations of air in masses of fibrin left from preceding inflammation. He gives illustrations of five cases, with postmortem findings in four. One patient recovered after treatment for pneumothorax, followed by large serous effusion. The area of resonance in this case was at the right, low down, near the spine, but it changed more to the front and became higher if the patient lay on his left side. The depth to which the exploratory needle is inserted should be measured in such a case. The relics left of the pneumothorax above probably caused the resonance which was transmitted through the fluid below.

48. **Cure of Tuberculous Pneumothorax.**—Penzoldt is able to report the cure of a patient with tuberculous pneumopyothorax with tuberculosis of the lung, with no recurrence during nearly five years since. Treatment consisted of the strictest rest and open-air reclining, with abundant nourishment. For eleven months this was enforced, the patient, a physician of 30, living in this way on a veranda and never leaving the floor during this period. He did not resume his work in the laboratory for two years and did not take up his full work until after three years. The fever gradually subsided during the first month, and in two months afterward a large effusion had collected in the place of the pneumothorax, containing pus cells, but not causing fever after the first month. The local treatment was by repeated punctures, followed by injections of iodoform. Notwithstanding the compression by air and fluid for nine months at least, the lung did not seem to have lost its elasticity, but resumed its functions when the compression was removed. Tubercle bacilli were found alone in the puncture fluid. The first symptoms of a tuberculous affection had been noticed about a year before the pneumothorax developed. Nearly a year elapsed before the patient was allowed to go up or down stairs, and more than a year before he was allowed a short stroll in the garden. The rest and repose are considered by Penzoldt as perhaps the most essential factors in the treatment. In two apparently similar cases this treatment failed to arrest the progress of the tuberculous affection. If there is a possibility that the aggravation of the case is due merely to the pyothorax, then the Bulau, Pichler or Perthes' procedures might be tried. In case pus cocci are found in the effusion, and the trouble seems to be merely a pyothorax in a tuberculous person, if the general health allows and the lesion is unilateral, radical intervention is justified and may insure good results. If tuberculous patients were content to continue the open-air reclining and taking an abundance of nourishing food long enough, better results would certainly be chronicled in many cases. Above all things, they should not allow themselves to be deluded into relaxing their absolute rest mode of life when improvement begins to become manifest. Physical rest is imperative for months and years.

49. **Treatment of Epilepsy.**—Strümpell remarks that the majority of his epileptic patients have already been treated for years by other physicians before they come to him, and have taken quantities of the bromids without apparent benefit. His experience has convinced him that, as a rule, the symptomatic results of this drug have been overestimated, while its injurious by-effects have been underestimated. In a recent case he does not give the bromids nor in cases in which the intervals are two or three months or longer. When the attacks are very frequent he gives bromin, but very cautiously, watching for its general as well as for its symptomatic effect. The mental decline which some accept as the inevitable result of the epilepsy in certain cases, he thinks is much more liable to be due to chronic bromin intoxication. In place of bromin he gives belladonna and zinc oxid. They have sometimes succeeded after failure of bromin; especially in petit mal the latter has rendered him good service at times. An infusion of valerian, particularly before retiring, has also been found beneficial by some patients. In discussing the subject of exercise for epileptics, he states that one of his patients took a mountain pedestrian tour and afterward felt better than for years. He emphasizes the fact that the epilepsy is only a symptom, and that the general and psychic condition must be studied as much as this one symptom. He suggests that possibly the epileptic seizure may be a sudden discharge of all the accumulated tonicity ("spannkräfte") in the motor centers. This suggests further the possibility that it might be possible to prevent the seizures by calling on and fatiguing the motor centers until there is no possibility for their tonicity to accumulate. Treatment by muscular exercise certainly has some theoretic grounds, and he is now ordering therapeutic gymnastic exercises for some of his patients. If the cramps occur specially in a certain limb, he has the patient exercise the groups of muscles involved. He has no special successes to report from this exercise-therapy, and it should always be strictly individualized, absolute rest being indicated for some patients.

55. **Laparotomy in Tuberculous Peritonitis.**—Göschel's experience harmonizes with Wunderlich's in that about 23.3 per cent. of the cases of tuberculous peritonitis with exudation and in 9.8 per cent. of the cases with adhesions the patients can be permanently cured by operative intervention. The laparotomy does not cure the disease, but it creates much better conditions for the spontaneous healing of the lesions. Children recover spontaneously in about a third of the milder, uncomplicated cases. Between 1894 and 1904 Goschel operated on 19 patients with tuberculous peritonitis, the ages ranging from 16 to 56. In three patients the intestines were affected, and the lungs were tuberculous in all but seven. Three of the patients were completely cured, the interval of good health being from six to eleven years. A number of others were materially improved; the rest succumbed to the progress of the disease or its localizations elsewhere than in the peritoneum. The details of a number of the cases are given, with the admonition that laparotomy always helps, sometimes cures and never harms.

56. **Essential Albuminuria.**—Neukirch's daughter, when about 10, had an attack of diphtheria, and afterward for years passed alternately normal and albuminuric urine. The transition from normal to albuminuric urine was sudden and liable to occur at any time. The albuminuria finally vanished altogether in about five years, after a sojourn among the mountains, and there has been no sign of nephritis at any time. The patient has been in perfect health for eight years. By exclusions he has come to the conclusion that the albuminuria must have been the result of some disturbance in the innervation of the kidney.

58. **Gastroenterostomy in Treatment of Non-cancerous Stenosis of Pylorus.**—Fraenkel relates the details of 13 cases and the results of recent examination of the 9 cured patients. The outcome of the latter is extremely gratifying and should compel an earlier resort to intervention in such cases without postponing it so long that the patient succumbs to starvation or to the result of repeated hemorrhages as in the four fatalities in his experience.

59. **Cure of Spondylitic Paraplegia.**—Schilling comments on the fine results that can be attained in the treatment of spinal affections when the physiologist, the neurologist and the surgeon work together for this end. In a case described, the symptoms suggested spastic, atactic paraparesis at first, but a tuberculous apical affection and the prominence later of the fifth dorsal vertebra confirmed the diagnosis of spondylitic paraplegia. The patient was treated with the Rauchfuss method of suspension, with the result of a complete cure in two and a half years. He recommends this hammock-like appliance as desirable to prevent decubitus in the bedridden.

60. **Symmetric Proliferation of Fat Tissue.**—Koch attributes the symmetric lipomatosis in the case under observation to a fall from a scaffolding three years previously. The patient fell on his feet and the spine has been sensitive ever since. There was symmetric weakness in the arms and they grew very fat in parts, with great weakness. The weakness in the arms was not noticed until about a year after the accident, but then became so severe that the man was unable to

work. The proliferation of fat accompanying the motor weakness of the musculature is corroborative of the spinal origin of the trouble.

61. **Hourglass Stomach.**—The hourglass stomach in the case reported by Goldschmidt was evidently congenital, and had caused no symptoms until hemorrhage occurred in a small ulcer in the pylorus region. The blood filled the cardial part of the stomach which protruded in the right half of the hypochondrium, and was supposed at first to be the tumefied spleen. There was no vomiting and the stools were normal.

62. **Treatment of Pleuritis with Effusion in Course of Pulmonary Tuberculosis.**—Doerfler noticed long ago that progressing cases of pulmonary tuberculosis seemed to be favorably influenced by an intercurrent pleuritic effusion on the same side when the latter was removed by thoracentesis after it had lasted about a week. His experience since has effectually confirmed this observation, and he states that of 45 patients with pleuritis with effusion accompanying pulmonary tuberculosis, treated by thoracentesis, only 5 failed to derive great benefit from it. He explains this benefit as due to the hyperemia which follows the removal of the effusion. The action of the intervention is similar to that of a laparotomy in tuberculous peritonitis. Doerfler waits a week to allow the lung to be well compressed by the effusion, and then evacuates it as completely as possible. The beneficial effect observed has led him to ask whether it might not be possible to accomplish the desired end without waiting for intercurrent pleurisy to develop. He refers to Murphy's work in this line. As every case of pleuritis with effusion is suspicious of tuberculosis, the effusion should not be left for more than a week. He adds that it might be well to experiment on animals as to whether an artificial hydrothorax and its removal at the proper time might not help to cure a tuberculous process in the lungs.

64. **Olive Oil in Affections of Stomach and Duodenum.**—Merkel reviews his very favorable experience with olive oil in cases of stenosis of the pylorus with hyperacidity consecutive to an ulcer, also chronic ulcers with hyperacidity, and of hyperacidity with pyrosis, and cases of uncomplicated ulcer. The effect was magical in one case of ulcer, and the patients all gained in weight and strength.

67. **Genesis of Tuberculosis of Female Genitals.**—Merkel describes a case of tuberculous ulceration of the vagina in a woman who had pulmonary tuberculosis and had been in an asylum for five years on account of progressive paralysis. He is inclined to attribute the fresh tuberculous process in the vagina to infection from the woman's sputum-soiled fingers.

Deutsche medizinische Wochenschrift, Berlin and Lepisic.

68 (XXXI, No. 32, August 10.) *Die congenitale Coxa vara. A. Hoffa.
69 Histologische Untersuchungen über die Einwirkung der Finsen-Bestrahlung bei Lupus. J. Doutrelepont.
70 New, Effective, Soluble Element in Ergot.—Ueber einen neuen, wirksamen, wasserlöslichen Bestandteil des Mutterkorns. E. Vahlen.
71 *Mammary Tumors.—Die operative Behandlung der Geschwulste der weiblichen Brust. E. Braatz.
72 Zur Pathogenetischen Bedeutung des Bacillus funduliformis. Kiskalt.
73 *Beitrag zur Pathogenese des chronischen Magengeschwurs (gastric ulcer). C. E. Bloch. (Commenced in No. 31.)
74 Cooling Box for Milk.—Kühlkisten zur Kühlung der Säuglingsmilch im Hause. A. Speck.

68. **Congenital Coxa Vara.**—Hoffa shows by Roentgen pictures that there is a sharp distinction between the congenital and the traumatic or rachitic coxa vara. He thinks the former is the result of some arrest of growth during intrauterine existence, probably due to some affection of the bone. He has encountered six unilateral and five bilateral cases.

71. **Operative Treatment of Tumors in Female Breast.**—Braatz urges the removal of every lump in the breast, even when positively benign, as it may become cancerous later. The benign tumors he cuts out with the scissors under local anesthesia, keeping close to the tumor. General anesthesia is imperative for cancerous growths. For several reasons he urges that an ulcerating cancer should be kept covered tight. Sometimes the growth will heal over under a zinc vaselin dressing. He comments on the way in which a woman with an ulcerating cancer will finger the growth and then shake hands with friends and handle articles in constant use in the family. He does not advise an operation for far advanced carcinoma in elderly women, but insists on the protecting dressing. In removing a cancerous growth, he removes both pectoral muscles with it. Functional disturbances from loss of these muscles are readily prevented by certain exercises which he describes. In order to have complete oversight over the axilla, he carries the incision back to the margin of the latissimus dorsi and makes another, perpendicular incision extending upward to the junction of the middle and outer thirds of the clavicle.

73. **Pathogenesis of Chronic Gastric Ulcer.**—Bloch believes that the reason why ulcers develop more frequently near the pylorus is because this part of the stomach is not subject to such contraction as the greater curvature. When the walls contract over a lesion it is more apt to heal than when it is left open, exposed to the action of the gastric juice. The primary lesion must be often a slight necrosis from some small hemorrhage. This loosens the epithelium and leads to the necrosis, and this, in time, if unprotected, leads to erosion from the gastric juice and ulceration. Attempts to produce a gastric ulcer were successful only when they included some injury to the nerves.

Münchener med. Wochenschrift, Munich.

75 (LII, No. 31, August 1.) *Ueber das Vorkommen von Typhusbazillen in der Galle von Typhuskranken und "Typhusbazillentragern" (bacilli in gall bladder). F. Forster and H. Kayser.
76 Ueber Multiplizität von Tumoren. S. Oberndorfer.
77 *Zur Nachweis der Spirochaete pallida im Blut Syphilitischer. C. T. Noeggerath and R. Staehelin.
78 *Die radikale Heilung der durch Prostatahypertrophie bedingten Harnverhaltung mittelst Prostatectomia suprapubica totalis. Rebentisch.
79 Passage of Ankylostoma Larvæ Through Intact Skin.—Die Durchwanderung der Ankylostomalarven durch die menschliche Haut. H. Bruns.
80 Modified Counting-Chamber Stain.—Eine Modifikation der Zollikoferschen Kammerfärbungsmethode. W. Riebes.
81 *Operations to Reduce Size of Nose.—Weiteres über Nasenverkleinerung. J. Joseph.
82 Tracheal Hook.—Einfache Trachealhaken zum Gebrauche beim Kanulenwechsel. v. Stubenrauch.
83 *Determination of Acidity in Stomach Content.—Ueber die Säurebestimmung im Mageninhalt. H. Leo.
84 *Ueber Cytotoxine, mit besonderer Berücksichtigung der Ovariotoxine und Thyreotoxine. H. Lüdke. (Commenced in No. 30.)
85 *Influence of Bicycling on Heart.—Der Einfluss des Radfahrens auf das Herz. Beyer. (Commenced in No. 30).
86 *Physicians in Politics.—Aerzte in der Politik. W. Kühn (Leipsic).
87 (No. 32.) Simple Hemometer.—Ein einfacher Hämometer für den praktischen Arzt. H. Breyer.
88 *Face Presentations.—Lässt die Haltungsverbesserung bei Gesichtslagen einen besonderen Vorteil erwarten? O. v. Herff.
89 *Zur Kenntnis der Fruktosurie. O. Neubauer.
90 *Depressive Conditions in the Aged.—Die Depressionszustande des hoheren Lebensalters. R. Gaupp.
91 *Action of Digitalis on Sound Subjects.—Ueber Digitaliswirkung am gesunden Menschen. A. Fraenkel.
92 *Permeability of Gastrointestinal Walls in Newborn Animals. —Die Durchgängigkeit des Magendarmkanales neugeborener Tiere für Bakterien und genuine Eiweissstoffe. A. Uffenheimer.
93 *Red Light and Scarlet Fever.—Ueber den Einfluss des roten Lichtes auf Scharlachkranke, welcher im Nürnberger Kinderspital beobachtet wurde. Cnopf.
94 *Ueber die Leberfistel (Hepatostomie). F. Cahen.
95 *Infant Mortality and Survivals.—Sauglingsmortalitat und Auslese im Darwinschen Sinne. H. Koeppe.

75. **Typhoid Bacilli in Bile of Typhoid Patients.**—Recent experiences by Forster and Kayser indicate that the gall bladder is the lurking place of typhoid bacilli, both in man and in animals. The bacilli linger here and propagate, and are frequently found years after the typhoid fever when attention is attracted to the gall bladder by lithiasis. The cases in which bacilli are eliminated in the feces occasionally in persons apparently healthy, is explained by the finding of these nests of bacilli in the gall bladder. As they are eliminated in the bile, the fact that they do not cause disease may be explained by assuming that the course of the digestive tract below the gall bladder does not contain any portals of entry for these germs. This is an argument in favor of the tonsillar etiology of typhoid. Or it may be that the intestinal tract may have acquired a local active immunity. It is possible also that after subsidence of the irritation in the gall bladder the typhoid germs may die out—an argument in favor of surgical removal of gallstones in such cases. In the cadaver of a woman of 84 who had succumbed to pneumonia, the gall bladder was found chronically inflamed and full of

stones. A few cultures of the colon bacillus developed from .05 c.c. of bile, with innumerable typhoid bacilli. Nothing was known of typhoid in her previous history. In another case, paratyphoid bacilli were found in pure cultures in the bile of a woman of 74 with cholelithiasis. No symptoms of the latter and no history of typhoid had been known during life. In the case of a woman of 40 there have been severe attacks of gallstones yearly for several years. The patient is otherwise healthy, although with a history of typhoid at 10. Typhoid bacilli are found intermittently in the stools and the agglutination test is positive at 1/1,000, macroscopic in three hours. In another case, a woman of 64 had an attack of typhoid fever and typhoid cholangitis. Since then typhoid bacilli are found intermittently in the stools and agglutination is positive at 1/1000. There have been occasional gallstone attacks since the first. Only one of the five cases described occurred in a man. Typhoid bacilli were found in the gall bladder and evidences of cholecystitis, although he had not presented any appreciable symptoms of cholelithiasis. The year before his death he had passed through a mild febrile affection suspiciously like typhoid. In regard to treatment to expel the bacilli from the system, the prospects of immunization processes do not seem very promising, but treatment of the gall bladder seems to offer a chance for success. By doing away with the residual bile the conditions become much less favorable for the growth of the bacilli, and by inducing a copious secretion of bile the germs are liable to be entirely washed away. Surgical intervention might also be considered in case of chronic "bacilli bearers," as this would suppress the focus.

77. **Spirochetes in the Blood of Syphilitics.**—The spirochetes were found in the blood of a number of cases of secondary untreated syphilis. About 1 c.c. of blood was mixed with ten times as much 0.3 per cent. acetic acid. The blood thus dissolved was centrifuged and the Giemsa stain applied. The preceding acetic acid does not interfere with the action of the stain if the specimens are left in it for several hours.

78. **Suprapubic Total Prostatectomy.**—Rebentisch describes four cases of retention from hypertrophied prostate in extremely decrepit men treated with brilliant results by suprapubic removal of the entire prostate. He reviews the history of this intervention and describes the Freyer technic which he follows. It allows complete oversight of the bladder, and is the operation to be selected in case of large tumors and for those in which preceding catheterization is impossible for any reason, or in which the diagnosis is still vague after exhausting all known methods of research. Small, hard, fibrous tumors can be readily removed by way of the perineum, and this route is also to be preferred in case of contracted bladder. In all other cases the choice of the route may depend on the operator's personal preference.

81. **Correction of Abnormally Large Noses.**—Joseph has had considerable experience with operations to reduce the size of unduly large noses. His illustrations show the fine results attained without leaving a trace of a scar. The intranasal technic which he has finally perfected consists of an incision parallel with the edge of the nostril, at the point where the new edge is to be made. He then resects on both sides the median portion of the cartilage framework and sometimes part of the lateral segment of the alar cartilage. The skin of the septum is so elastic that it adapts itself to the altered shape of the nose, not requiring excision. It is sutured with a few delicate stitches to the quadrangular cartilage. By this technic there is not a trace of a scar, either on the external nose nor in the septum. Another improvement in his technic is the substitution of local for general anesthesia. He finds a mixture of adrenalin and cocain sufficient for the purpose. His experience with 100 operations of the kind has shown that this technic is entirely free from danger; the after-treatment requires only a week or two. Some of his patients were actors and actresses whose homely noses interfered with their obtaining engagements. The results have been exceedingly satisfactory in every instance.

83. **Determination of Stomach Acidity.**—Leo replies to criticisms that have been made in regard to his technic for determining the acidity of the stomach content and reaffirms its accuracy and reliability. It shows the total acidity, both the free HCl and that in combination with albuminoids, including the albumoses and the peptones. The total acidity is represented by the amount of $CaCO_3$ necessary to neutralize it. The acidity of the remaining acid residue after neutralization with $CaCO_3$ is due to the biphosphates and the albuminoids, exclusive of the true peptones.

84. **Cytotoxins.**—Lüdke concludes his extensive study of the subject of specific cell toxins and antisera with the statement that to date the action of the various cell toxins is confusing. They intermingle and the products resulting from their action serve further to confuse the resulting picture. The specific action of the cell toxins must be rendered more intense and more specific before satisfactory results can be attained with them.

85. **The Bicycle and the Heart.**—Beyer's investigation of the influence of bicycling on the heart has convinced him that the bicycle has a specifically injurious action on that organ. The heart in the young is particularly subject to this deleterious influence on account of the unfavorable conditions of the blood pressure in youth. Hypertrophy of the heart and nervous heart disturbances are the typical bicyclers' affections. It has been found in Germany that the number of cases of acute articular rheumatism among the recruits has materially diminished of late years, while the number of heart affections has tripled. In one army corps, out of 233 recruits with various heart affections, 41 had been bicyclers, as also 9 of the 18 patients with hypertrophy of the heart, and 8 out of the 37 patients with nervous irregularity in the heart action. In another corps, the proportion was 37.5 per cent. in 293 cases of heart affections, with 23 out of the 52 cases of hypertrophy and 9 out of the 22 of nervous irregularity. He found further that among these recruits those who had previously led a sedentary life formed the largest contingent of heart affections among bicyclers. On Sundays and holidays they took long bicycle trips with overexertion of the heart. Next in number were the workmen who rode the bicycle to and from work. The exertion after the fatigue of the day's work caused overexertion of the heart. The recruiting officers attribute the increase in heart disease among the young men to the lesser hardiness of youth in our day and to the epidemic of influenza. Beyer suggests that unwise or immoderate bicycle riding is a third and no less important factor.

86. **Physicians in Political Life.**—Kühn remarks that medical men take less part in political life than the members of other professions, as a busy physician has little opportunity to mix in public affairs. He reviews the conditions in various countries in this respect. France has invariably taken the lead, physicians always being numerous in her legislature. Cornil and several others are now in the senate, and there are 60 medical men in the house of deputies. When Combes was prime minister there were three physicians in the cabinet. In Italy, prominent medical men are sometimes appointed to the cabinet; Bianchi and Baccelli have thus had cabinet positions in late years and a few physicians are members of the senate. In Spain, physicians are frequently party leaders, and always have a large representation in the legislature, Dr. C. M. Cortezo having recently been appointed minister of public instruction. This participation of the medical profession in political affairs also prevails in Portugal to a lesser extent. There seems to be little of it in Denmark; only one medical man has been in the legislature for several years. The people there are comparatively well educated, and the members of the overcrowded medical profession are unable to maintain the intellectual supremacy which would make them leaders in political matters. He reviews the conditions in Canada, Australia and in southeastern Europe, drawing the conclusion that it is highly important for the members of the medical profession in every country to unite in a firm organization, and following the principle, "In union there is strength," to make their influence felt on all sides and to have their interests represented, especially in legislative bodies. He adds that he is proud to say that Germany can serve as a shining example to all other lands in this respect. Virchow showed long ago what great benefits

result from such a combination, both in political life and in local affairs. He concludes with the prayer that it may be possible to bring numbers of physicians into the national and state legislatures, and that they may all labor for the rights of the medical profession as zealously as Mugdan, their present representative in the German Reichstag.

88. **Face Presentations.**—In twelve years of experience, von Herff has had 21 face presentations in which he interfered to change the presentation, and 6 of the children were born dead. In another series of 76 cases of face presentation in which no intervention was attempted, all the children were born alive except 4. Fehling's and Bumm's statistics give similar results. All the mothers were dismissed in good health. These results indicate that it is unwise to attempt to change the presentation unless forced to hasten the course of the delivery for other reasons or from fear of rupturing the perineum. The birth should be carefully supervised, listening for the heart sounds, and interfering only when pressing indications arise. In case of forehead presentation, however, an attempt should be made to transform it into occipital presentation or, if this is not possible, into face presentation if any intervention is deemed advisable.

89. **Fructosuria.**—Neubauer has encountered a case of pure fructosuria (levulosuria), in which no sugar except the fructose was eliminated in the urine. He knows of only two similar cases on record. On a diet free from carbohydrates the fructose vanished entirely from the urine. Cases of mixed melituria are not uncommon, and he reviews the differences and analogies between these groups and describes a number of interesting tests and experiments with his patients.

90. **Depression in the Aged.**—Gaupp presents here a careful study of the conditions of depression in 300 cases at Kraepelin's clinic in which the patients were all over 45. He also refers to 51 cases of mania, grouping them all by the various manifestations of the mental affection. Simple and periodical mania was more frequent in men than in women, while the conditions with depression were more frequent in women at this age.

91. **Action of Digitalis on Sound Circulation.**—Fraenkel was able to retard the pulse in sound subjects by administering strophanthus, without any by-effects. There was no increase in the blood pressure. If he prevented the slowing of the pulse by giving atropin, then the blood pressure rose above normal. The slowing of the pulse is thus the factor which prevents the increased blood pressure under the action of digitalis.

92. **Permeability of Alimentary Canal for Bacteria.**—Uffenheimer has been studying the permeability of the gastrointestinal walls of newborn animals. He found that the mucous membrane of guinea-pigs did not allow the passage of anything but tubercle bacilli and antitoxin, but that in rabbits and other animals large amounts of albumin and other substances were absorbed as well as antitoxin, etc. The mucosa of the alimentary canal, therefore, behaves differently in these various species.

93. **Red Light in Scarlet Fever.**—Cnopf's communication was reviewed editorially on page 793.

94. **Hepatostomy.**—Cahen relates that he succeeded in saving a patient with a severe pyemic gallstone affection by making an opening into the gall bladder. More radical intervention was impossible on account of extensive adhesions, cholemia and tendency to hemorrhage. The only choice was between hepatoenterostomy and hepatostomy. On account of the patient's extreme debility he decided on the latter operation, and it seemed to relieve the patient at once from his serious condition. Nine months later he was apparently in perfectly health, free from all disturbances, and attending to his daily work as a shoemaker. The canal was hollowed out in the liver tissue with the Paquelin cautery to avoid hemorrhage. Owing to the congestion in such cases, the outflow of bile even from the smaller biliary passages is copious and amply suffices to relieve the liver.

95. **Infant Mortality and Survival of the Fittest.**—Among the other points brought out in Koeppe's study of the lessons to be drawn from the statistics of infant mortality, may be mentioned his statement that a high infant mortality in a given year is always followed by a higher mortality among the surviving children in the second and third years thereafter. The reverse is also true, that the measures which reduce infant mortality serve to strengthen the surviving children so that more pass successfully through the second and third years.

Books Received

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Vol. XVII. Seventeenth Session Held at Birmingham, Ala., December 13-15, 1904. Edited by W. D. Haggard, M.D. Cloth. Pp. 521. Published by the Association. 1905.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY. Second Series. Vol. X. M—Mnikhovski. Cloth. Pp. 935. Washington: Government Printing Office. 1905.

HANDBOOK OF PHYSIOLOGY. For Students and Practitioners of Medicine. By A. Flint, M.D., LL.D. 247 Illustrations—4 in Colors. Cloth. Pp. 877. Price, $5.00 net. New York: MacMillan Co. 1905.

STATIC, HIGH FREQUENCY, RADIO, PHOTO AND RADIUM THERAPY. By W. H. King, M.D., LL.D. Cloth. Pp. 291. Price, $2.50. New York: Boericke & Runyon. 1905.

ABDOMINAL OPERATIONS. By G. A. Moynihan, M.S., F.R.C.S. Fully Illustrated. Cloth. Pp. 694. Price, $7.00. Philadelphia: W. B. Saunders & Co. 1905.

ATONIA GASTRICA (Abdominal Relaxation), by A. Rose, M.D., and R. C. Kemp. M.D. Cloth. Pp. 203. Price, $1.00 net. New York: Funk & Wagnalls Co., 1905.

PRACTICAL MASSAGE IN TWENTY LESSONS. By H. Nissen. 46 Illustrations. Cloth. Pp. 167. Price, $1.00 net. Philadelphia: F. A. Davis & Co. 1905.

RADIUM AND RADIO-ACTIVITY SUBSTANCES. By C. Baskerville, Ph.D. Cloth. Pp. 164. Price, $1.00. Philadelphia: Williams Brown & Earle.

CLEFT PALATE AND HARE LIP. By W. A. Lane, M.S., F.R.C.S. Paper. Price, 5 S. Pp. 63. London: Medical Publishing Company. 1905.

NEW PATENTS.

Patents of interest to physicians, etc., recently granted:

797838. Tablet-molding press. James F. Buckley, Ilford, England.
797718. Portable *x*-ray apparatus. Eugene W. Caldwell, New York.
797792 Alkyl-oxy-acetyl urea and making same. Erik C. Clemmensen, and A. H. C. Heitmann, Detroit.
798013. Antiseptic compound. Alphonso M. Clover, Ann Arbor, Mich.
797696. Vaginal syringe. Willis P. Flowers, Scranton, Pa.
797707. Obstetrical pad. Emmeline H. Pearson, Washington, D. C.
797607. Invalid-table. John H. Ramberg, Brooklyn.
797644. Pill-tile. Walter E. Trahern, Hopkinsville, Ky.
12384. Re-issue. Apparatus for generating formaldehyd. Edgar F. Billings, Boston.
798093. Hypodermic syringe. Edward F. Dean, Denver.
798205. Making nitric acid. Heinrich H. Neidenfuhr, Halensee, Germany.
798208. Making sodium ferrocyanid. Camille Petri, Buchsweiler, Germany.
798457. Self galvanic massage apparatus. Sven R. E. Schmidt, St. George, S. I., N. Y.
798367. Obstetrical appliance. Joseph H. F. Smokey, Natchez, Miss.
798464. Support for prolapsed uterus. Lewis G. Sprague, Henderson, N. Y.
798149. Stopper for water bags. Charles O. Towne, Torrington, and J. H. Woodward, Waterbury, Conn.
798239. Apparatus for producing carbonic acid. Gregor Walzel, Newark, N. J.
798893. Breast-pump. Uberto D. Ezell, Kimball, Texas.
798908. Apparatus for carrying out bacterial purification of sewage or drain water. Christoph Kremer, Gross Lichterfelds, near Berlin, Germany.
798611. Surgical appliance. Willard F. Main, Iowa City, Iowa.
798920. Reducing oxalic acid and its derivatives by electrolysis. Emil von Portheim, Prague, Austria-Hungary.
798833. Intermittent movement in pasteurizers. Wm. J. Ruff, Quincy, Ill.
798852. Anesthetic generator and mixer. David D. Weisell, Fort Wayne, Ind.
799216. Syringe. Frank C. Barnes, Fremont, Ohio.
799166. Package for surgical ligatures. Robert W. Johnson, New Brunswick, N. Y.
799272. Medical and surgical vibrator. Harold W. Shonnard, East Orange, N. J.
799114. Speculum. Crispus D. Tracey, Little Rock, Ark.
799702. Operating table. Ashbel P. Barlow, St. Joseph, Mich.
800071. Obstetrical appliance. Richard H. Cheatham, Vermont, Ill.
799895. Massage appliance. John D. Doughty, and J. R. Sanford, Conn.
800087. Chemical apparatus. David Genese, Baltimore.
799568. Ear trumpet. George G. Lewis, Syracuse, N. Y.
799664. Apparatus for treating ankylosis of the knee. Robert R. Norwood, Mineralwells, Texas.
799806. Nursing bottle. Ernest H. Simonds, Berkeley, Cal.
799881. Massage device. Jerome B. Wells, Cleveland, Ohio.